Forward looking Statement

This presentation contains express or implied forward-looking statements within the Private Securities Litigation Reform Act of 1995 and other U.S. Federal securities laws. For example, we are using forward-looking statements when we discuss the expected timing of obtaining regulatory approval for our various patient trials and clinical data readout, proposed trials that may occur in the future, the timing and implementation of our collaborations with various partners and the execution of definitive agreements relating to such collaborations and the potential benefits and impact our products could have on improving patient health care. These forward-looking statements and their implications are based on the current expectations of our management only, and are subject to a number of factors and uncertainties that could cause actual results to differ materially from those described in the forward-looking statements. The following factors, among others, could cause actual results to differ materially from those described in the forward-looking statements: changes in technology and market requirements; we may encounter delays or obstacles in launching and/or successfully completing our clinical trials; our products may not be approved by regulatory agencies, our technology may not be validated as we progress further and our methods may not be accepted by the scientific community; we may be unable to retain or attract key employees whose knowledge is essential to the development of our products; unforeseen scientific difficulties may develop with our process; our products may wind up being more expensive than we anticipate; results in the laboratory may not translate to equally good results in real clinical settings; results of preclinical studies may not correlate with the results of human clinical trials; our patents may not be sufficient; our products may harm recipients; changes in legislation; inability to timely develop and introduce new technologies, products and applications; loss of market share and pressure on pricing resulting from competition, which could cause our actual results or performance to differ materially from those contemplated in such forward-looking statements. Except as otherwise required by law, we undertake no obligation to publicly release any revisions to these forward-looking statements to reflect events or circumstances after the date hereof or to reflect the occurrence of unanticipated events. For a more detailed description of the risks and uncertainties affecting us, reference is made to our reports filed from time to time with the Securities and Exchange Commission.
Cell therapy company using off the shelf placenta-derived cell products

Entering late-stage trials in 3 indications

Multifactorial therapy releasing a range of therapeutic proteins in response to signals from patient's body

First in class 3D cell culturing technology allowing for efficient, controlled production of different cell products in commercial quantities
Public company, traded on NASDAQ and TASE- PSTI
Market Cap: ~ $130 million
Cash and marketable securities: $26.7 million (as of June 30, 2017)
- During fiscal 2017 we were awarded $19 million in grants: EU Horizon 2020- $8m to support Phase III CLI study, 8.7m to support phase II hip fracture, Israeli Government ~$1.5m, Bird foundation ~$1m
- No debt
- 180 employees (13 PhD, 6 MD)
- IP Ownership: over 100 granted patents and ~120 pending applications
From The Miracle of Birth to Therapeutics for All

Following child-birth, cells are extracted from the Placenta.

Proprietary platform in a State-of-the-art GMP manufacturing facility.

PLX cells are frozen & stored, readily available for use.

Point of care thawing prior to administration.
Best In Class GMP Facility
3D Manufacturing, In-house Cell Production

150,000 doses annually
Manufacturing Facility approved by:

- FDA
- European Medicines Agency
- Ministry of Health Israel
Placenta Derived Cells

- Ethically accepted
- Rich & Diverse
- Highly potent
  - Pro-angiogenic
  - Immunoregulatory
- Young donors
- Unlimited source & Easy to collect
- Over 25,000 Doses of 300 million cells per placenta

The Placenta Project was launched by the US National Institutes of Health (NIH) to further explore the role of the placenta in health and disease.

http://www.the-scientist.com/?articles.view/articleNo/43618/title/The-Prescient-Placenta/
## Company Pipeline

### Pivotal pre-marketing trials

<table>
<thead>
<tr>
<th>Indication</th>
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* One Multinational trial- U.S- phase 3, Europe- via adaptive pathway allowing early marketing approval  
** Pending FDA/EMA approval
PLX-PAD

- Reduces inflammation
- Stimulates growth of collateral blood vessels
- Stimulates repair of damaged muscle

Peripheral Arterial Diseases

Orthopedic injuries
PLX-PAD Mechanism of Action

Ischemia → Inflammation → Loss of muscle tissue

Angiogenesis ↑
Immunomodulation - reduction of inflammation ↓
Muscle regeneration ↑

VEGF
Angiogenin
Angiopoietin 1
HGF

Osteopontin
SDF1
GDF15
MIF

Decorin
MMP1
HGF
TGFβ
Galectin 1

Muscle Recovery in process
Regenerated muscle tissue

Rows of myoblast nuclei indicating regenerative hyperplasia
## Company Pipeline

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* One Multinational trial- U.S- phase 3, Europe- via adaptive pathway allowing early marketing approval

** Pending FDA/EMA approval

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Peripheral Arterial Disease (PAD)

- PAD is caused by fatty deposits in leg arteries that obstruct blood flow
- Intermittent claudication is the early stage while critical limb ischemia (CLI) is the more advanced stage of PAD
- CLI Patients suffer from severe pain at rest, skin wounds, tissue necrosis and poor quality of life with a **high risk of leg amputation and death**
- 5-6 million people in U.S. and Europe suffer from CLI
- Estimated cost for treatment in the U.S. is over $25 billion per year*
- Up to 40% of patients are **unsuitable for revascularization** and experience up to a 40% amputation rate at 1 year

* Source: Sage Group
Clinical studies with PLX-PAD in PAD

• Two completed Phase I studies in critical limb ischemia (CLI) in U.S. and Germany, N=27
  ✓ Good safety profile
  ✓ Positive trends of efficacy (pain reduction and increase in tissue perfusion), defining inclusion/exclusion criteria for pivotal studies
  ✓ Optimal dose selected: two treatments of 300 million cells, two months apart

• One ongoing multinational Phase II study in intermittent claudication (IC) in U.S., Germany, S. Korea and Israel, N=172
  ✓ Enrolment completed
  ✓ Data readouts in early 2018
PLX-PAD Phase III study highlights-U.S./ Europe (N=246)

- An interim analysis of efficacy will be performed in support of an application to the EMA for Conditional Marketing Authorization (CMA)
- Interim analysis could lead to CMA based on the success of either the primary or one of the key secondary endpoints, or a composite endpoint that includes death, major amputation, and certain measures of severity of wounds and gangrene
- Primary endpoint is time to event (amputation or death); other measures of efficacy include AFS, quality of life, TcPO$_2$, and pain score
- Dosing regimen: two doses of 300 million cells, two months apart (n=144), placebo (n=72)
- No HLA matching or immunosuppression required
- Follow-up of 12-36 months increases the study’s power allowing for a smaller trial
Clinical Development of CLI in Japan

- Accepted to the PMDA’s accelerated regulatory pathway for regenerative therapies
- A single 75 patients study may lead to early conditional marketing approval and reimbursement
- Binding term sheet with Sosei to establish JV for the clinical development and commercialization of PLX-PAD for CLI in Japan
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- **Critical Limb Ischemia (CLI)**: One Multinational trial- U.S- phase 3, Europe- via adaptive pathway allowing early marketing approval
- **Hip Fracture**: Pending FDA/EMA approval
- **Acute Radiation Syndrome (ARS)**: Pivotal study via FDA Animal Rule

* One Multinational trial- U.S- phase 3, Europe- via adaptive pathway allowing early marketing approval
** Pending FDA/EMA approval
Hip Fracture

- Femoral neck fracture is the most common form of hip fracture
- Annual treatment costs in the U.S. are estimated to be between $10 to $15 billion, and are expected to rise due to the aging population, with mortality rates of up to 36%*
- Previous studies have shown that PLX-PAD stimulates repair of damaged muscle and can play a critical role in improving the outcomes of the growing number of surgeries for femoral neck fracture
- $8.7 million grant from the Horizon 2020 program to support pivotal phase III trial
- PLX-PAD program in hip fracture might be eligible for Breakthrough Therapy designation and benefit from the 21st Century Cures Act as well as the EMA’s Adaptive Pathways pilot project

* Source: Simran Mundi, Bharadwaj Pindiprolu, Nicole Simunovic, Mohit Bhandari
Muscle Regeneration - clinical data

Muscle Injury following Total Hip Replacement (N=20)

Change at week 26 in Mean (±SE) Gluteus Medius MVIC from Day 0 (mITT)

Improvement of 500% P=0.0067

MVIC = Maximum Voluntary Isometric Construction
Muscle Regeneration - clinical data

Muscle Injury following Total Hip Replacement (N=20)

Change in Volume from Day 0

Improvement of 300%
P=0.004
Muscle Regeneration- clinical data

Muscle Injury following Total Hip Replacement (N=20)

- Improvement of 500%  
  P=0.0067
- Improvement of 4000%  
  P=0.012

26 Week Analysis
150M vs. Placebo  
P=0.007
150M vs. 300M  
P=0.341

26 Week Analysis
150M vs. Placebo  
P=0.012
150M vs. 300M  
P=0.192
• Closing JV deal with Sosei- H2 2017
• Japan pivotal study initiation- H1 2018
• Data from phase II multinational study in Intermittent Claudication (IC), N=172 – H1 2018
• Initiation of phase III study hip fracture*
• Interim result from phase III in CLI via adaptive pathway in Europe- H2 2018/H1 2019

* Pending FDA/EMA approval
PLX-R18

- Stimulates regeneration of damaged bone marrow to produce blood cells (white, red and platelets)

Acute Radiation Syndrome (ARS)

Hematologic indications
PLX-R18 Mechanism of Action

Chemotherapy, Drugs side effect, BM malignant infiltration, AA, BMT failure

Acute Radiation Syndrome (ARS)

Bone Marrow Failure

- Low red blood cell count: severe anemia
- Low white blood cell count: infections
- Low platelet count: internal and external bleedings

Red blood cells
White blood cells
Platelets

G-CSF, GM-CSF, IL3, IL6, IL8, Epo, SCF, IL3, IL6, MCP1, HGF
### Company Pipeline

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* One Multinational trial- U.S- phase 3, Europe- via adaptive pathway allowing early marketing approval

** Pending FDA/EMA approval
Acute Radiation Syndrome (ARS)

ARS occurs following acute exposure to very high levels of radiation, and involves severe, potentially lethal injury to the bone marrow as well as to other organs and systems within the body.

High doses of radiation can destroy the bone marrow’s ability to produce white cells, red cells and platelets; without these cells patients are at high risk of death.
Collaboration on ARS with U.S. Government

**Governmental Departments**
- Department of Defense (DOD)
  - Warfighter and Immediate Response

**Research Institutes & Agencies**
- Armed Forces Radiobiology Research Institute
- NIAID/NIH

**Timeline**
- Initial Response (hours)
- Acute Phase (Days-Weeks)
- Chronic Phase (Months-Years)
- Early Post Exposure
- Late Post Exposure

**Exposure**
- Pre-exposure
- Early Post Exposure
- Late Post Exposure

**Clinical Syndrome**
- ARS (Hours-Weeks)
- DEARE (Months-Years)
Collaboration with the Department of Health and Human Services

Studies are conducted and funded by the National Institute of Allergy and Infectious Diseases (NIAID) at the National Institutes of Health (NIH)
The DOD studies seek to test the effectiveness of PLX-R18 as a medical countermeasure for ARS prior to and within 24 hours of exposure to high levels of radiation.

Study is designed to support the needs of the U.S. Armed Forces.

Collaboration with Fukushima Medical University and Science Center

Collaboration to develop PLX-R18 cells for the treatment of other component of ARS (GI, Lung and Skin), and for morbidities following radiotherapy in cancer patients.
PLX-R18- Phase I- Equivalent study (FDA Animal Rule)
PLX-R18 treatment increased survival rates in irradiated non-human primates (NHPs)

- All doses of PLX-R18 tested showed improvements in survival rates compared to untreated groups
- Two lower dosages, 4m and 10m/kg, resulted in an 85% survival rate in irradiated NHPs compared to a 50% survival rate in untreated groups

PLX-R18 treatment of non-irradiated NHP does not harm animal survival

- PLX-R18 cells did not increase leukocyte levels in non-irradiated NHPs
- No determination of an individual’s level of exposure would be required prior to treatment in scenarios requiring the rapid treatment of large populations, such as in the case of a nuclear emergency

Study demonstrated a trend towards enhanced neutrophil and lymphocyte recovery

Successful transition from small to large animals as required by the FDA’s Animal Rule pathway
PLX-R18- NHP Phase II- Equivalent study results

Pilot study designed to assess safety and efficacy of PLX-R18 following IM injection into irradiated and non-irradiated NHPs

Efficacy measures included survival and level of bone marrow function
About FDA’s Animal Rule

• The Animal Rule regulatory pathway allows for approval of treatments for diseases such as ARS in which human trials are not ethical or feasible
• The FDA uses animal efficacy studies and human safety data as the basis for product approval
• Marketing authorization under the FDA’s Animal Rule regulatory pathway for ARS may open the use for variety of other indication, such as HSC transplantation failure or chemotherapy induced bone marrow following cancer treatment

PLX-R18 Suitability for Use in ARS

✓ Allogeneic, ready to use as an off the shelf product
✓ Beneficial when administered even 48 hrs. following exposure to radiation
✓ Supports recovery of all three blood lineages (red and white cells and platelets)
✓ Easy IM administration
✓ No need for prescreening – no effect if injected to those who were not exposed to radiation
✓ Long shelf life
✓ Multifactorial secretion profile may treat other injuries to tissues-potential for use in a broad spectrum indications
PLX-R18 Additional Hematologic Indications

✔ Initiated a U.S. Phase 1 Clinical Trial of R18 for the treatment of insufficient hematopoietic recovery following hematopoietic cell transplantation
  - N=30
  - Open-label trial allows for interim data analysis

✔ Collaboration with the New York Blood Center to evaluate PLX-R18 as an adjuvant therapy to umbilical cord blood transplantation
  - Grant of $900,000 from Israel-U.S. Binational Industrial Research and Development Foundation (BIRD)
EXPECTED MILESTONES
PLX-R18

- Contract with U.S. government for ARS- H2 2017
- Initiation of pivotal study in ARS- H2 2017/H1 2018
- Data from DOD/AFFRI studies- H2 2018
- Data readout phase I open label HCT- H2 2017
- Preclinical data Fukushima- H2 2017
- Preclinical data NYBC- H2 2017
Commercialization Strategy

1. **Out-licensing** commercialization deals with partners

2. **Direct sales** of indications with small patients population & high market price

3. **Direct sales** of our PLX-R18 product for Acute Radiation Syndrome (governments)
<table>
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<tr>
<th>Partner</th>
<th>Indication</th>
<th>Deal structure</th>
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<td>IC, CLI</td>
<td>Joint Venture following marketing authorization by the South Korean authorities</td>
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<td>Acute Radiation Syndrome</td>
<td>U.S. National Institutes of Health (NIH) to examine the effectiveness of PLX-R18 as a treatment for ARS following 24 hours from exposure</td>
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<tr>
<td>FUKUSHIMA Medical University</td>
<td>Acute Radiation Syndrome</td>
<td>Pluristem will contribute cells and scientific knowledge, FMU will conduct the studies and provide the required resources.</td>
</tr>
<tr>
<td>Hadassah Medical Center</td>
<td>Acute Radiation Syndrome</td>
<td>Conducting trials to test PLX-R18 cells in the treatment of ARS and understanding of MOA</td>
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<td>CHARITÉ</td>
<td>CLI, Immunology, Cardiovascular, Orthopedic</td>
<td>Research to test the unique immunology of the placenta and cells MOA</td>
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Pluristem keeps IP and manufacturing rights in all collaborations.
Investment Highlights

• Publicly traded on the Nasdaq [PSTI]
• Late-stage pipeline with products advancing towards commercialization
• Advanced regulatory pathways could shorten the time to commercialization of PLX products
• Expected near-term data readouts
• “Off the shelf” product, no HLA-matching required
• Unique multifactorial MoA with a vast scientific background
• Major technological competitive advantages
• Strong collaborations and partnerships
Upcoming Milestones – 12 Months

- **Advanced pivotal (pre-marketing) clinical trials:**
  - Critical limb ischemia (CLI) – U.S., EU, Japan
  - Hip fracture – U.S., EU
  - ARS

- **Clinical data readout**
  - Intermittent Claudication (IC)
  - Incomplete engraftment of hematopoietic cell transplantation – open label
  - Pivotal study in ARS

- **Business development**
  - U.S. – advance discussions with U.S. government regarding stockpiling of PLX-R18 for ARS
  - Japan- close Sosei deal and form a JV
  - Asia – licensing/JV with Asian partner
Management team

Zami Aberman
Chairman & Co-CEO

Efrat Livne-Hadass
VP Human Resources

Erez Egozi
CFO

Sagi Moran
VP Operations

Racheli Ofir, Ph.D.
VP Research & Intellectual Property

Yaky Yanay
President & Co-CEO

Esther Lukasiewicz Hagai, M.D., Ph.D.
VP Clinical & Medical Affairs

Orly Amiran
VP Quality Assurance

Lior Raviv
VP Development

Karine Kleinhaus, M.D., MPH
Divisional VP, North America