

Corporate Overview

Brian M. Culley, Chief Executive Officer

Forward-Looking Statements

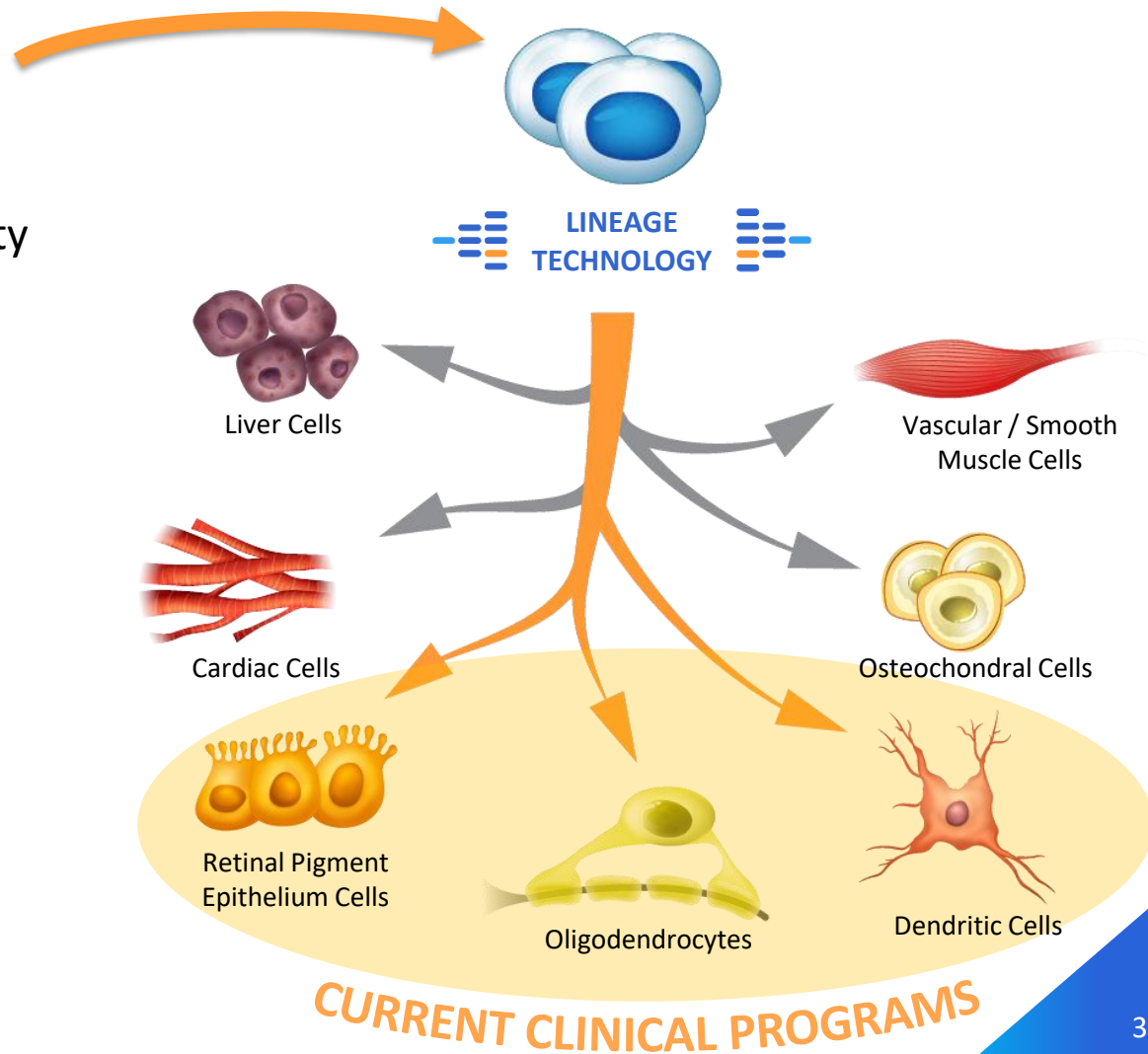
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Lineage Technology Platform

Lineage is a clinical-stage cell therapy company developing allogeneic (“off-the-shelf”) therapies to treat multiple diseases

- The Lineage Platform starts with *normal pluripotent cell lines*
- Pluripotent cells have the capacity to become *any* human cell type
- A proprietary, controlled process generates *only* the desired cell type
- No genomic manipulation or epigenetic memory risks
- Frozen cell banks enable commercial-scale production



In-House cGMP Production

Competitive advantage is the *proprietary directed differentiation* of inexhaustible pluripotent cells into specialized cell types such as retinal, glial, or dendritic cells

Capabilities

- Cell banking and handling
- Process development
- Manufacture of clinical trial material
- Scale-up in multi-liter bioreactors
- Multiple clean rooms for parallel GMP production runs

Facilities



Cell Cure Neurosciences
Subsidiary, Israel

Hundreds of ES and iPS cell therapy-related patents

Pipeline, Partnerships, and Progress

Programs	External Support Received	Phase 1	Phase 2a	Next Steps
OpRegen® (RPE Cells) Dry AMD with Geographic Atrophy (GA)	 רשות החדשנות Israel Innovation Authority \$16M			3 patients left to enroll in ongoing phase 1/2a
VAC2 (Dendritic Cells) Non-Small Cell Lung Cancer (NSCLC)	 CANCER RESEARCH UK >\$10M			2 patients left to enroll in ongoing phase 1
OPC1 (Oligodendrocytes) Spinal Cord Injury (SCI)	 CALIFORNIA STEM CELL AGENCY >\$14M			25 patients completed, planning phase 2b/3



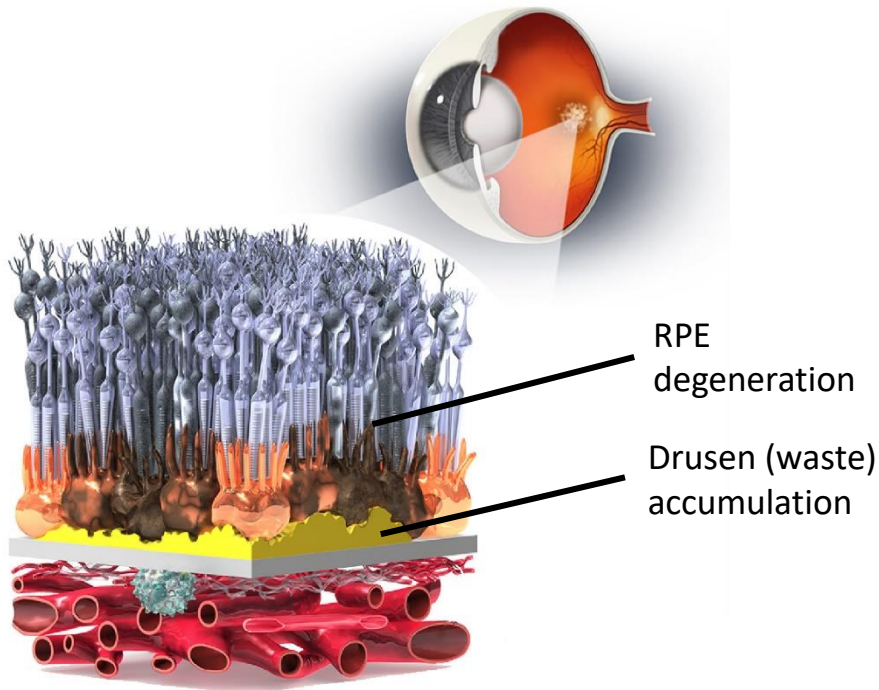
AMD is the **leading cause** of
irreversible vision loss in the US

Source: aao.org

OpRegen[®] : A Cell Therapy
Product Candidate for Dry AMD

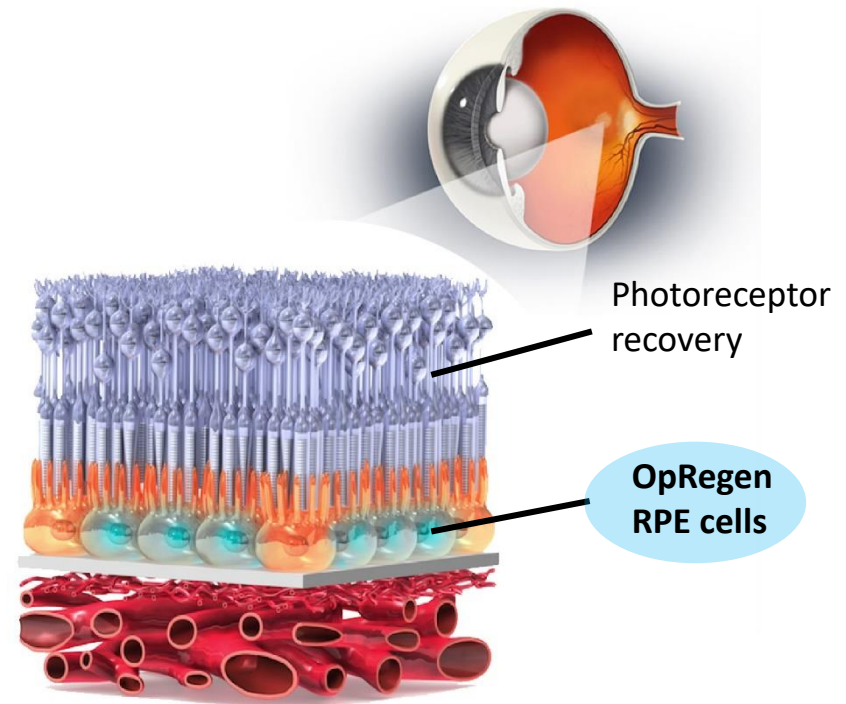
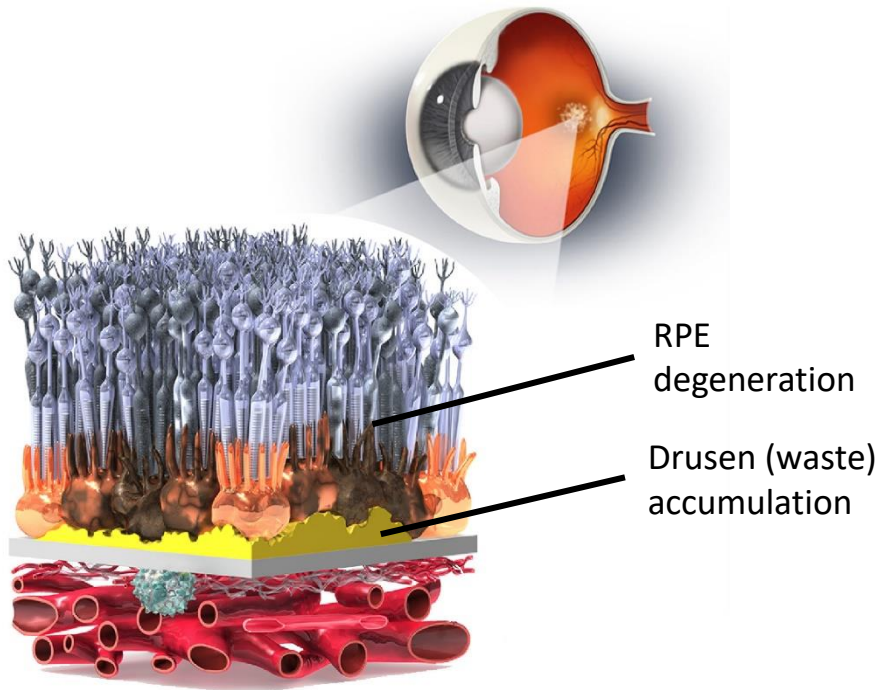
Dry Age-Related Macular Degeneration

- **Dry AMD involves the loss of retina cells (RPE) in an area of geographic atrophy (GA), causing impaired vision and blindness**



Dry Age-Related Macular Degeneration

- Dry AMD involves the loss of retina cells (RPE) in an area of geographic atrophy (GA), causing impaired vision and blindness
- OpRegen is a suspension of **RPE cells** delivered to the sub-retinal space to restore activity and support of photoreceptors

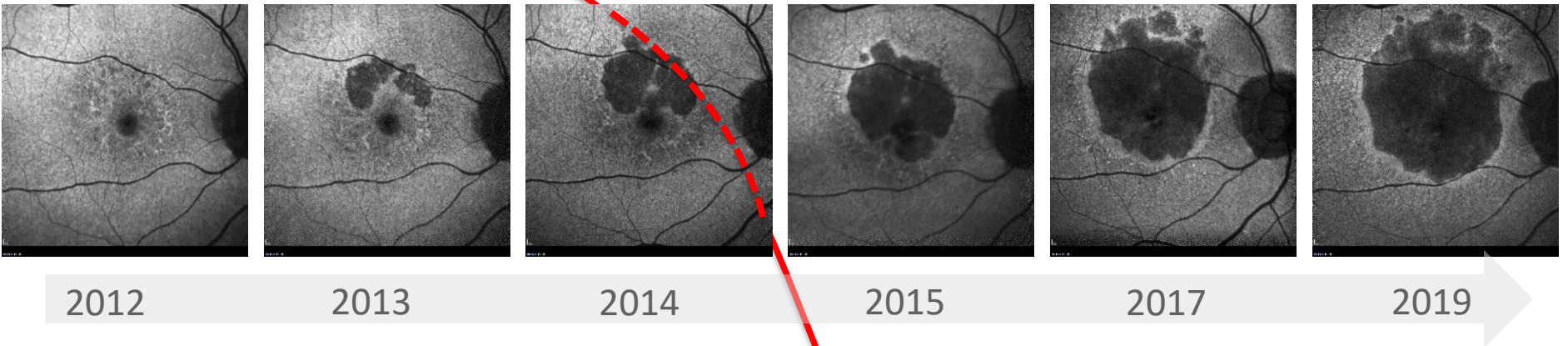


**Additional applications of RPE cell transplant may include
Stargardt's disease**

Rapid Progression of Dry AMD (Atrophic AMD)

Visual acuity

20/20



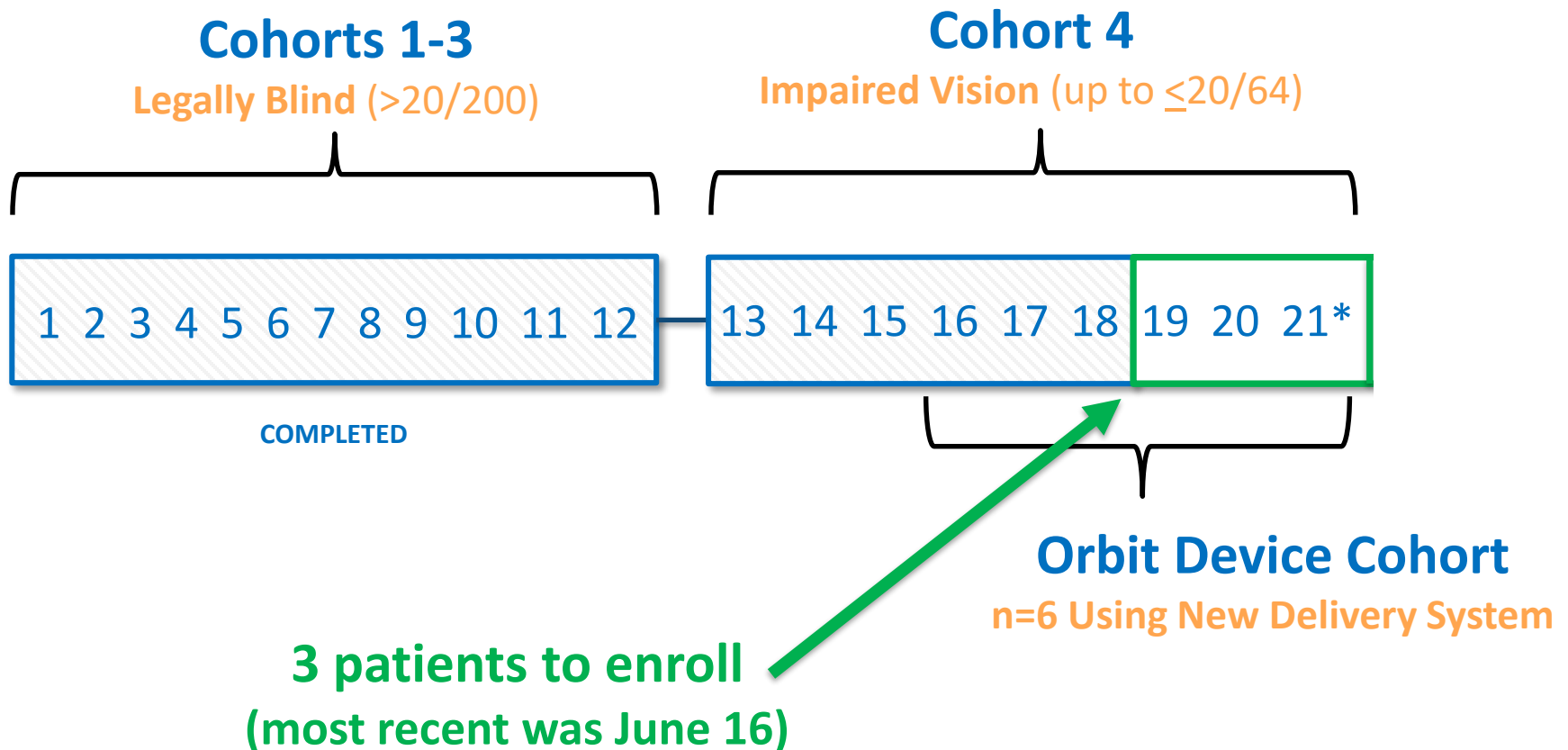
20/200 (legally blind)

20/640

Progressive destruction of the retina can lead rapidly to blindness

Ongoing Phase 1/2a Clinical Trial in Dry AMD

Design: Open label, single-arm, multi-center (5 sites)

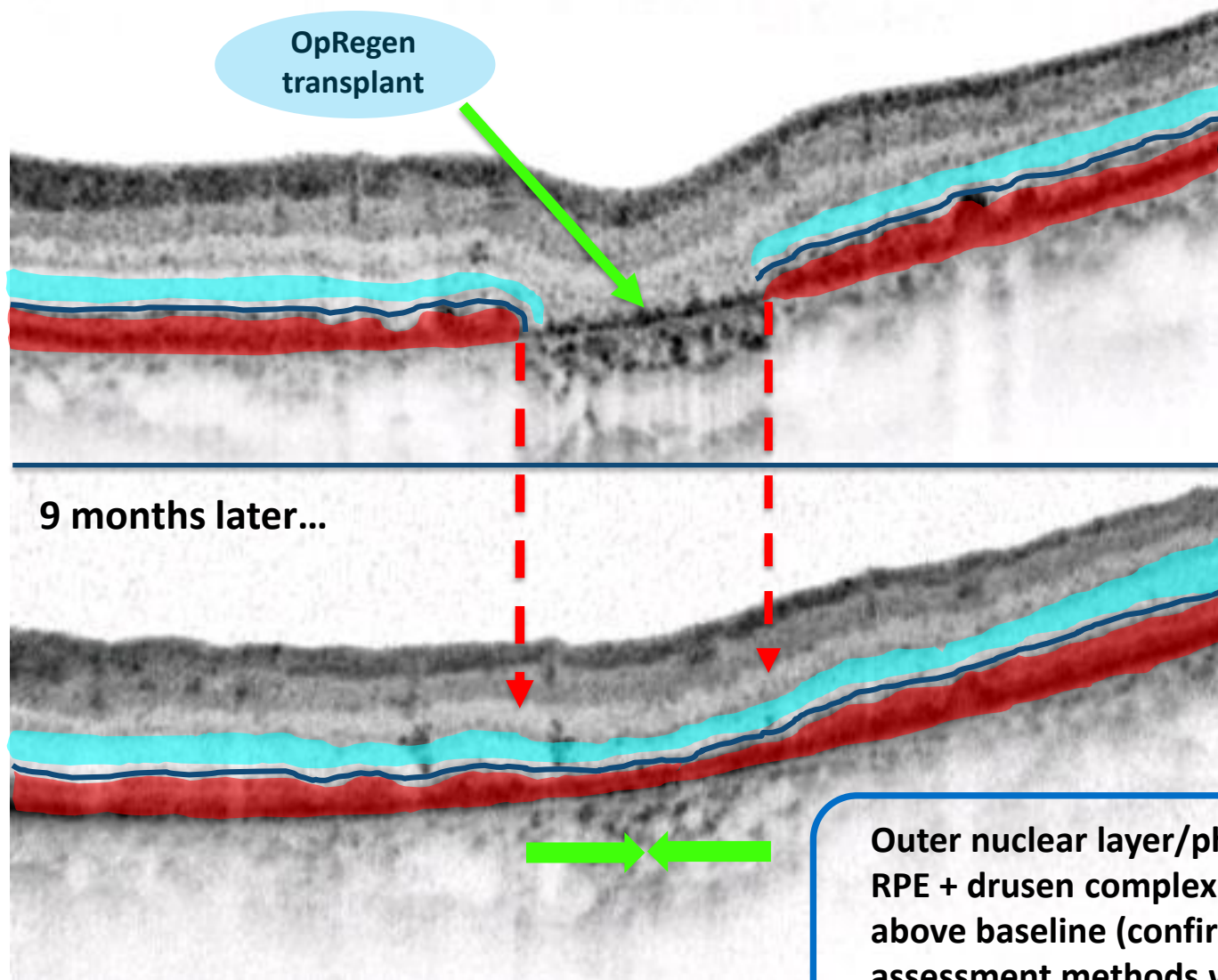


Clinical Findings to Date

- OpRegen RPE cells have been well tolerated; no marked, sustained reductions to vision in any patients (n=18)
- No reports of acute or delayed inflammation or rejection of transplanted cells
- 80% of Cohort 4 patients have better vision than at baseline at the 1-year time point or last available visit
- Directionally-positive findings across unrelated assessments - various patients have exhibited evidence for one or more of:
 - Reduced growth of geographic atrophy
 - Improved visual acuity
 - Improved reading speed
 - Improved retina structure
 - Reductions in drusen waste material
 - Stable engraftment of cells
 - **Restoration of retinal photoreceptor structure**



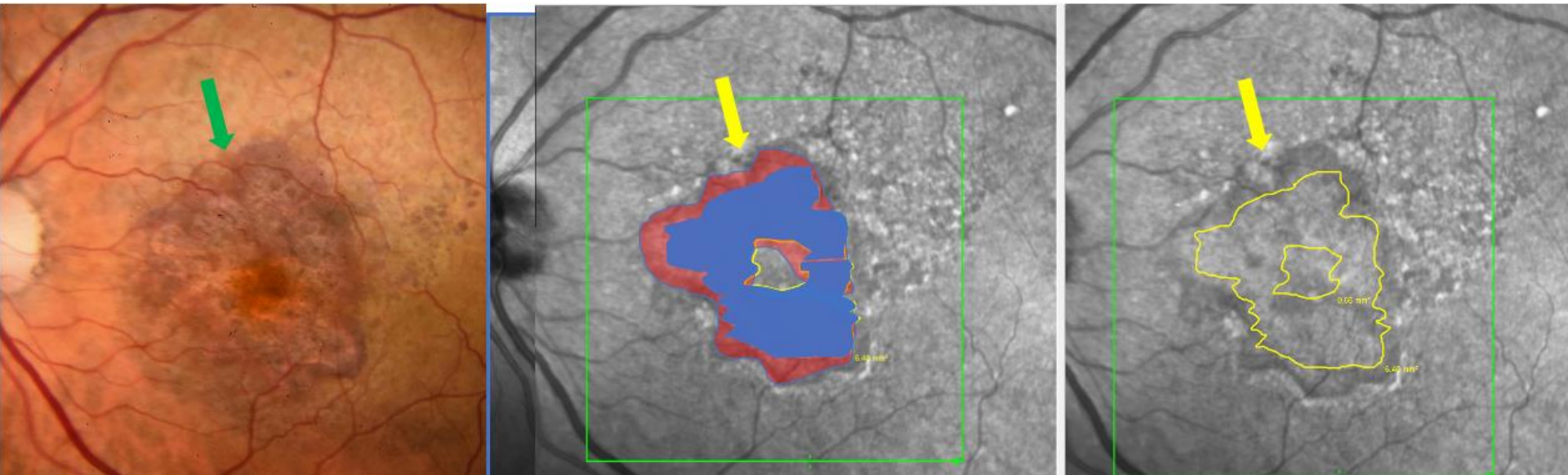
Recovery of Tissue Structure Observed After RPE Cell Transplant



Outer nuclear layer/photoreceptor and RPE + drusen complex areas increased above baseline (confirmed via multiple assessment methods with external experts)

Atrophy Regression Instead of Progression – Baseline to Month 9

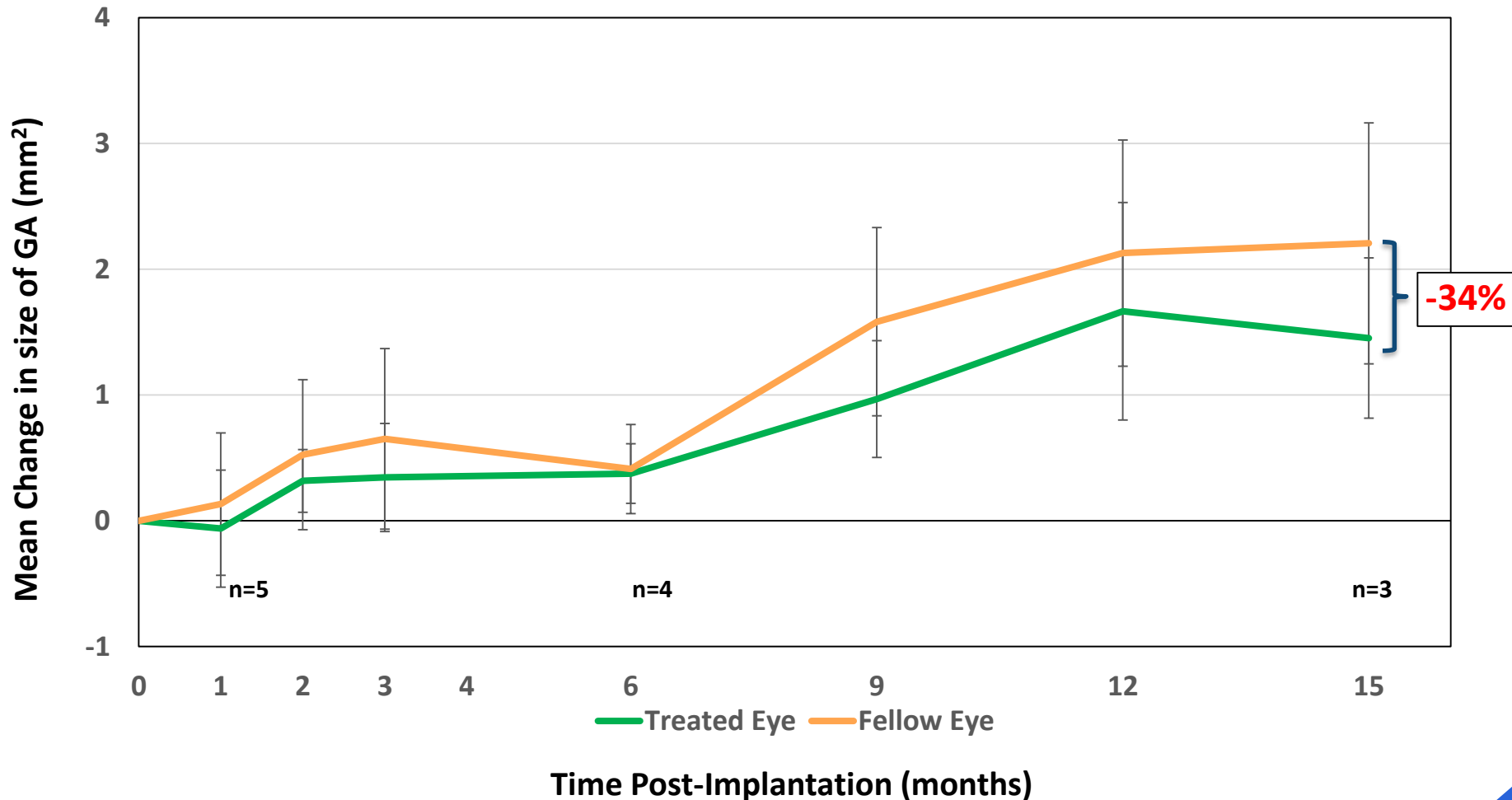
- Subretinal hyperpigmentation corresponded to regenerated outer retinal layers
- The grayish band around the lesion rim (yellow arrows) on IR corresponds to the brownish color visible on the CFP (green arrow) and the regenerated outer retinal layers on OCT, which was consistently visible on multiple images across the area



Change from Baseline to Month 9: - 0.55 mm SQRT/year

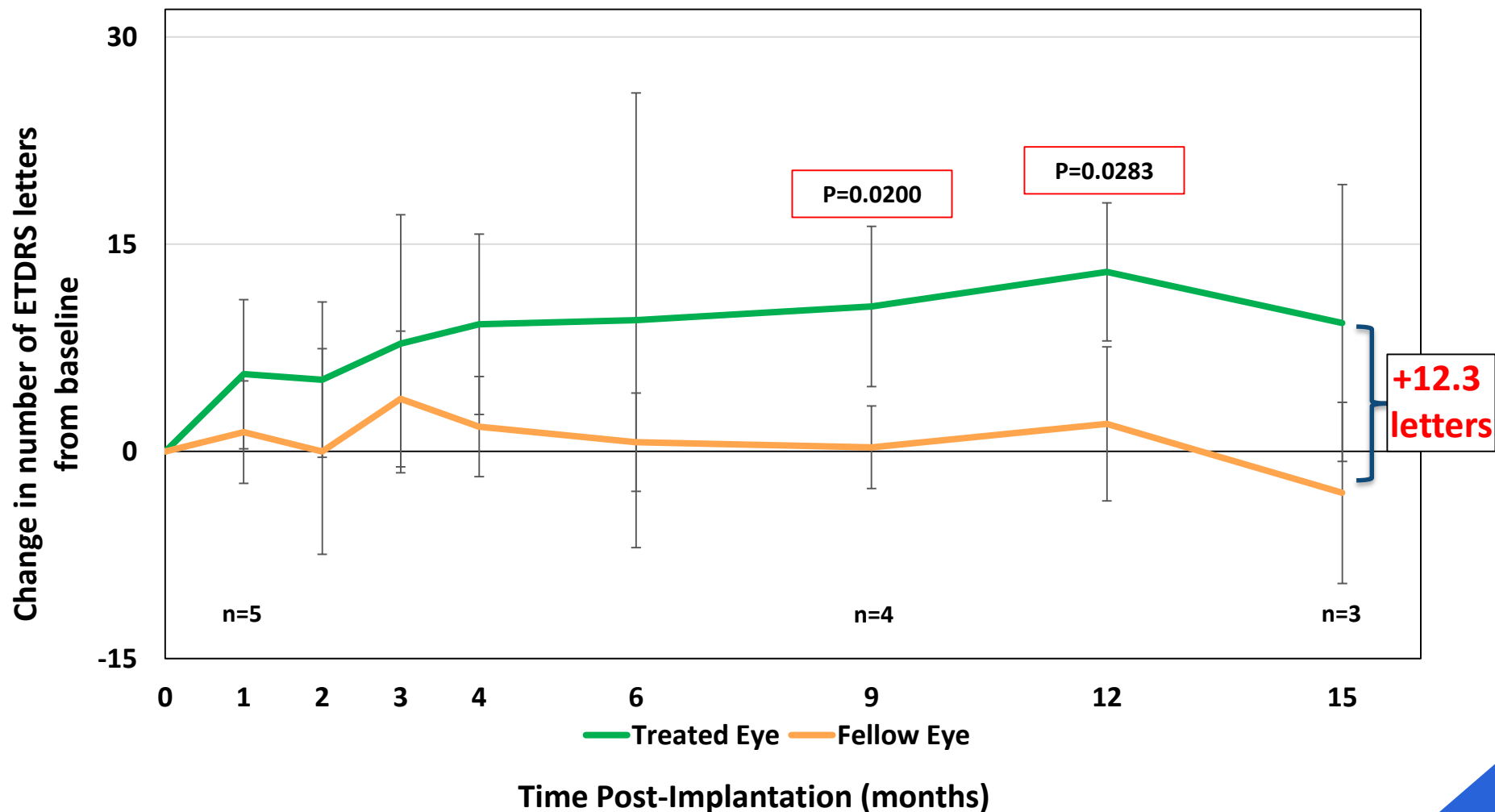
All Cohort 4 (Better Vision) Patients – Slower GA Growth

Mean Change in Area of GA (mm²) – Treated and Fellow Eye

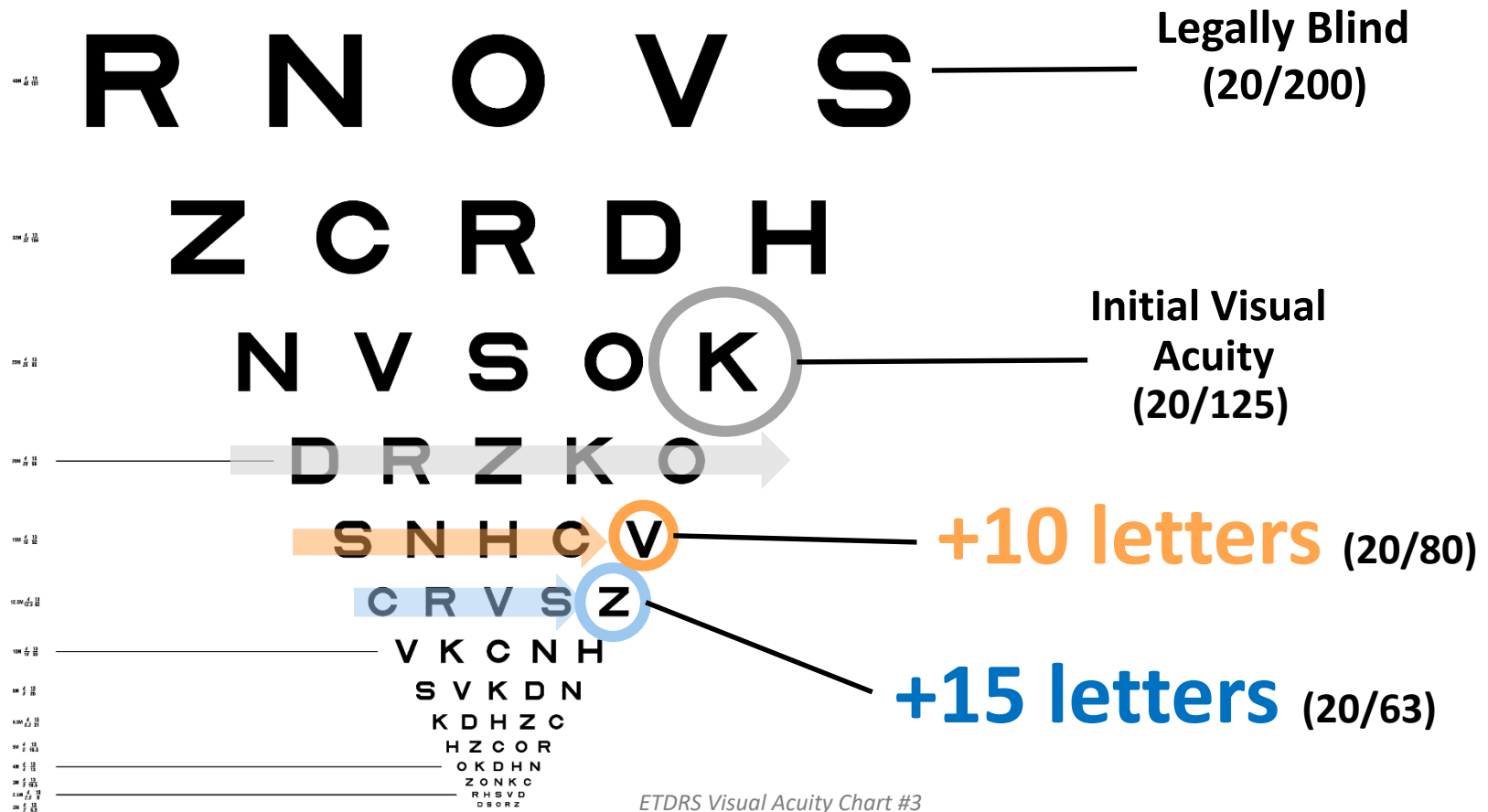


All Cohort 4 Patients - Best Corrected Visual Acuity

Mean Change in BCVA – Treated and Fellow Eye



Real-World Visual Acuity Example - “Letters of Improvement”

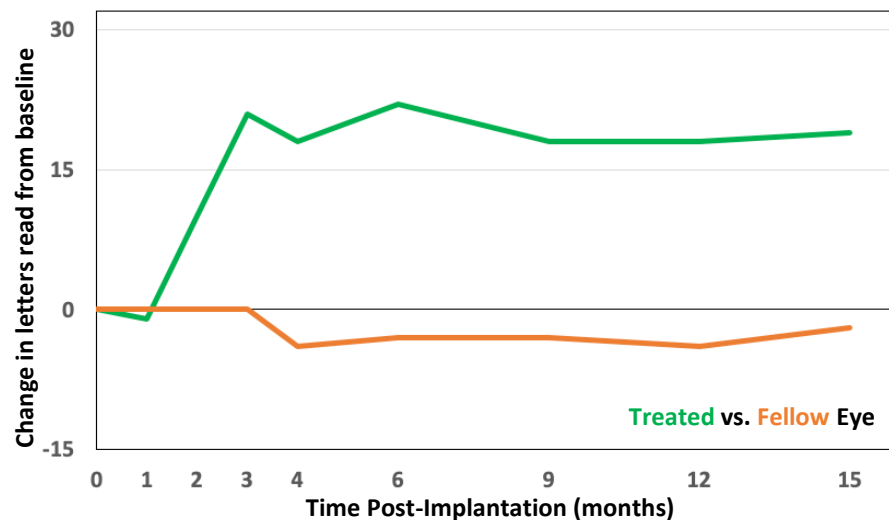


Patient Case Study: First Cohort 4 (“Better Vision”) Patient

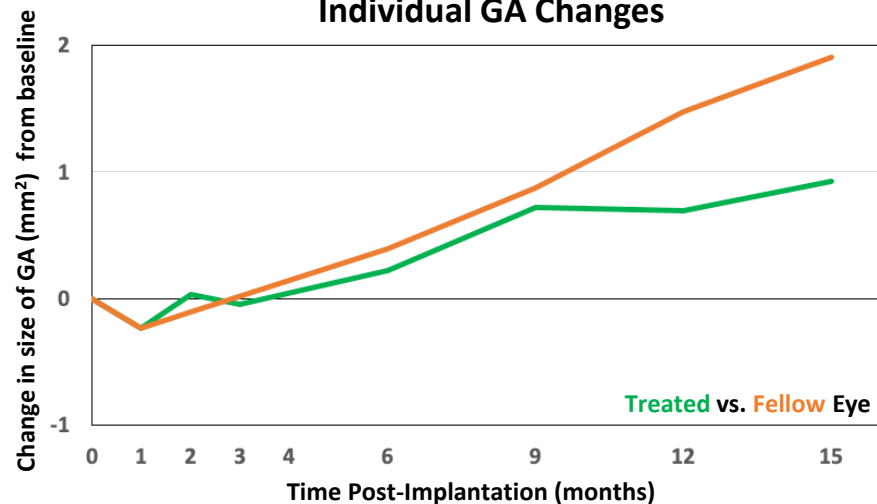
The first patient in Cohort 4, which consists of patients with less advanced disease than Cohorts 1-3, exhibited:

- 1 Durable improvements in vision (BCVA)
- 2 Slower progression of GA
- 3 Doubling of reading speed in the treated eye vs. untreated eye

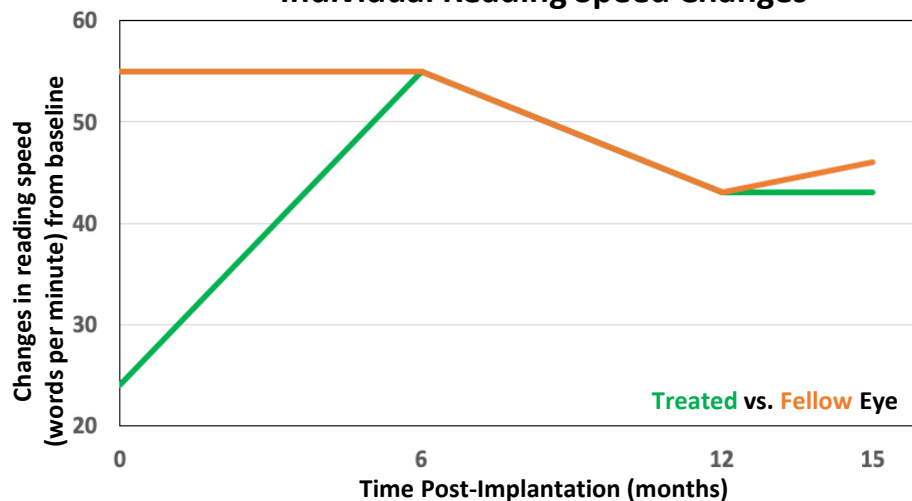
Individual BCVA Changes



Individual GA Changes



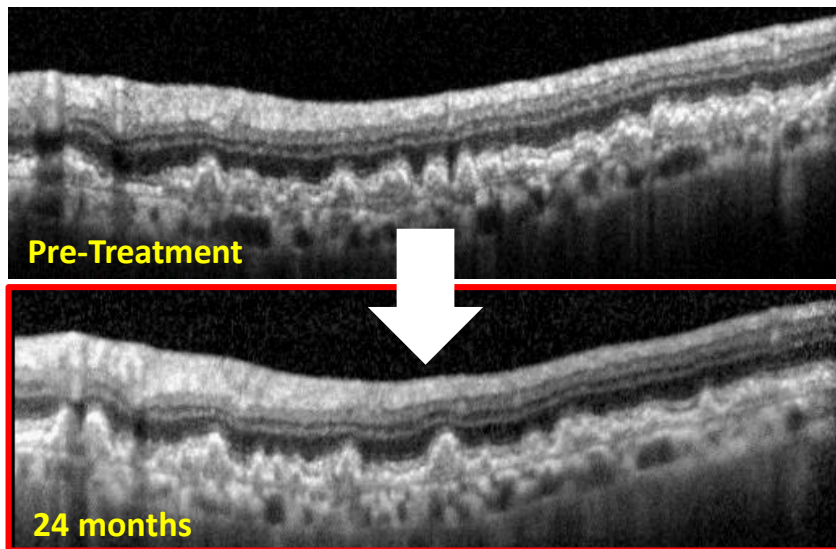
Individual Reading Speed Changes



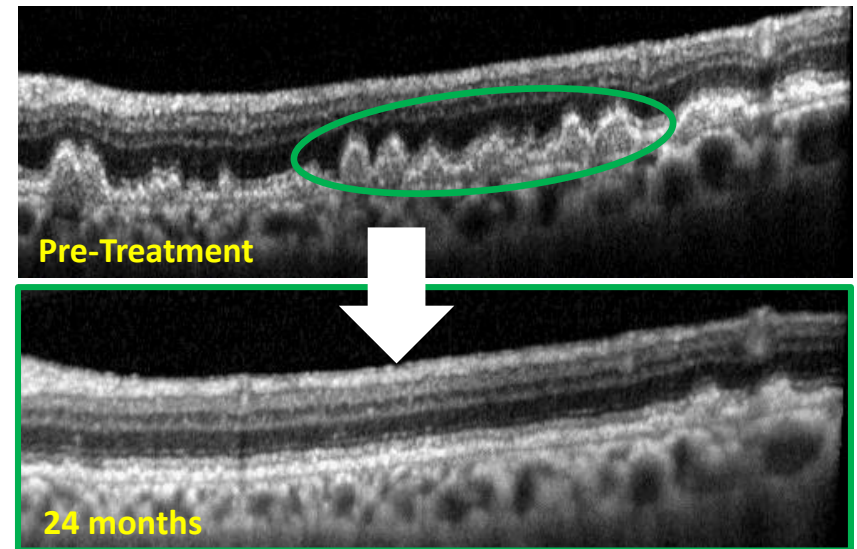
Evidence of Reductions of Drusen

- Drusen are deposits of waste material associated with dry AMD
- Reductions or changes to drusen has been observed through 24 months in some patients (wrinkled white line becomes flat)

Untreated

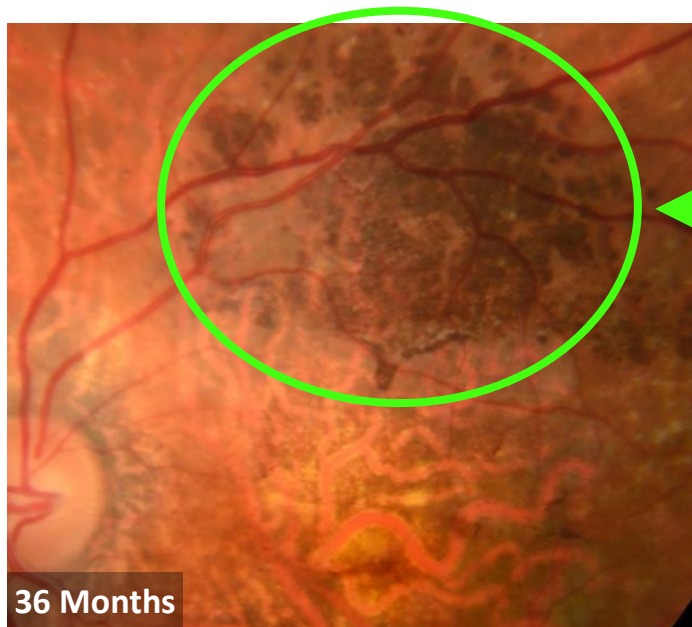


Treated



Evidence of Stable Engraftment of Transplanted RPE Cells

- OpRegen cells engraft for multiple years
- Avoids monthly or quarterly injections
- Surgical procedure takes approximately 25 minutes

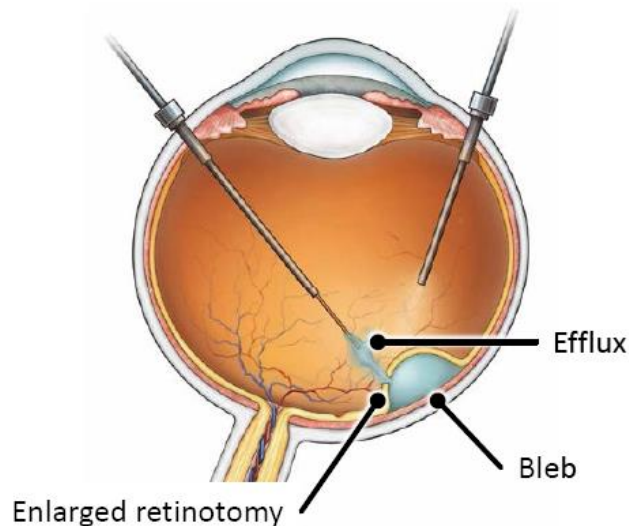


Punctate shaded areas are indicative of stable engraftment of pigmented cells for more than 36 months

Orbit Subretinal Delivery Device

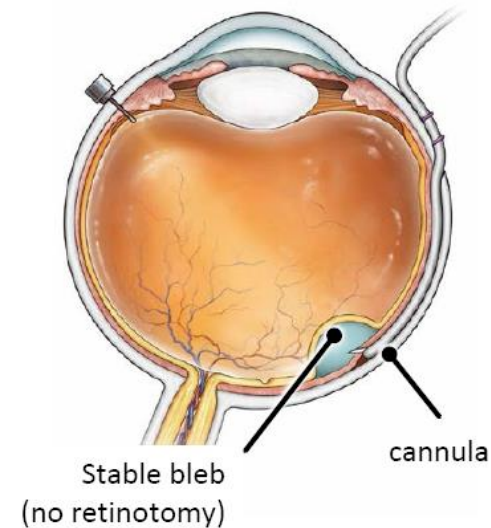
The Orbit Subretinal Delivery System (“Orbit SDS”) overcomes limitations with traditional subretinal administration

Traditional (n=15)



- Requires puncturing retina; cells efflux
- Macular fibrosis (ERM) observed in 13/15 patients (attributable to retinotomy)

Orbit SDS (n=6, 3 complete)



- Greater dose control; less variability
- 0/3 patients formed or had exacerbation of an ERM after using Orbit SDS ($p < 0.001$)

Building Confidence in a Clinically Meaningful Treatment Effect

Increasing evidence supports the expectation of a benefit following the transplant of Opregen cells in patients with dry AMD with GA

Key Attribute	Any Evidence?	Setting
Engraftment as a Monolayer	Yes	Multiple Species
Long-Term Survival <i>in vivo</i>	Yes	Multiple Species
Treatment Effect	Yes	Rodent
Durable Engraftment	Yes	Rodent // Human
Structural Improvement	Yes	Human
Drusen Reduction	Yes	Human
Improved BCVA	Yes	Human
Slower GA Growth	Yes	Human
Tissue Regeneration	Yes	Human

Addressing the Market With Commercial Scale cGMP Production

Current Manufacturing Capabilities

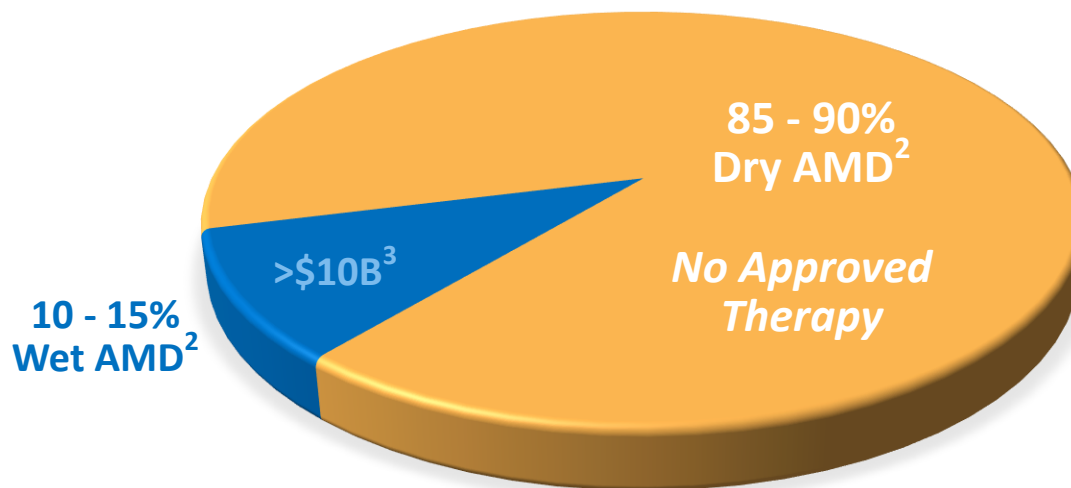
- **>99% pure RPE cells are manufactured from a pluripotent cell line**
 - NIH approved line was established >20 years ago
 - Extensive characterization and karyotyping completed
 - No genetic modifications are made to the cells
- **Immediate-use “thaw and inject” formulation**
 - No dose preparation means more eligible sites
 - From frozen cells to injection device in 5 minutes
- **Current production scale is 5 billion cells per 3-liter bioreactor**
 - Current production is >2,500 clinical doses/batch
 - Further scale-up can be performed in larger or additional (i.e. parallel) reactors



U.S. Market Opportunity

- AMD afflicts ~11 million people in the United States

Type of AMD	% of AMD Cases	Approved Therapies
Wet AMD	10 – 15%	Lucentis & Eylea (\$10 Billion in annual sales)
Dry AMD	85 – 90%	None ¹



Sources: (1) Bright Focus Foundation. Macular Degeneration Facts & Statistics: Bright Focus Foundation. <http://www.brightfocus.org/macular/about/understanding/facts.html>; (2) JM Seddon, Epidemiology of age-related macular degeneration. (AP Schachar, S Ryan eds.) Retina, 3rd ed. St. Louis, MO: Mosby; 2001;1039-50; (3) 2018 product sales summary based on publicly reported revenue figures for Lucentis and Eylea.

Dry AMD Competitive Landscape, Leading Approaches

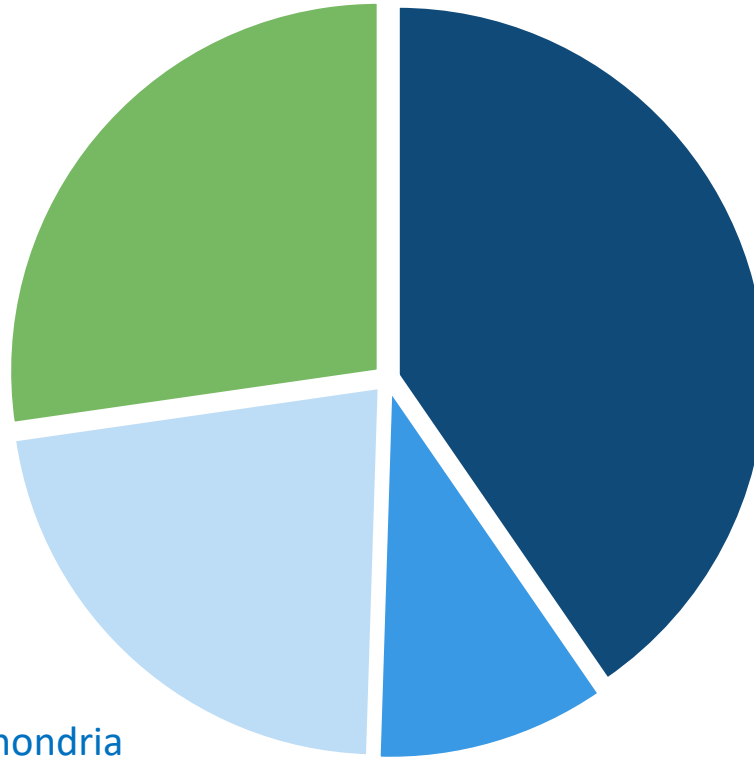
Only cell therapy has the potential for both disease reversal and infrequent dosing schedules

Cell Therapy

- **Lineage Cell (Ph1/2)**
- Astellas (Ph1/2)
- Regen. Patch (Ph1/2)
- jCyte (Preclinical)

Complement

- Apellis (Ph3 ongoing)
- Iveric (Ph2)
- Roche (Ph2)
- NGM (Ph1)
- Biogen (Preclinical)



Oxidative Stress / Other

- Allegro (Ph2), integrins
- Stealth Bio (Ph2), mitochondria
- Boehringer (Ph1), inflammasome

Gene Therapy

(also targeting complement)

- Gyroscope (Ph1/2)
- Hemera (Ph1)

Product Positioning

- **OpRegen RPE is well-positioned to capture a multi-billion dry AMD commercial opportunity**
 - Transplanting RPE cells may provide benefits which other approaches cannot
 - Market opportunity is not limited to monogenic deficiencies (gene therapy)
 - Treatment to date has been well-tolerated, potential for repeat treatments
 - Some patients have exhibited clinically meaningful improvement
 - Issued patents cover production, characterization, and formulation
 - Exclusive rights to unique delivery device

OpRegen: Delivering the best cells, the best way,
for the best outcomes.

OpRegen Next Steps

Upcoming Events and Key Considerations:

- Complete device assessment cohort (3/6 complete) – Q3
- Complete enrollment of phase 1/2a (3 min, 6 max) – Q3
- Planning discussions with the FDA on comparative trial design – Q4
- Present updated OpRegen data at AAO – Q4
- Evaluate partnership opportunities - ongoing
- Consider expanding to other diseases of retinal degradation - ongoing



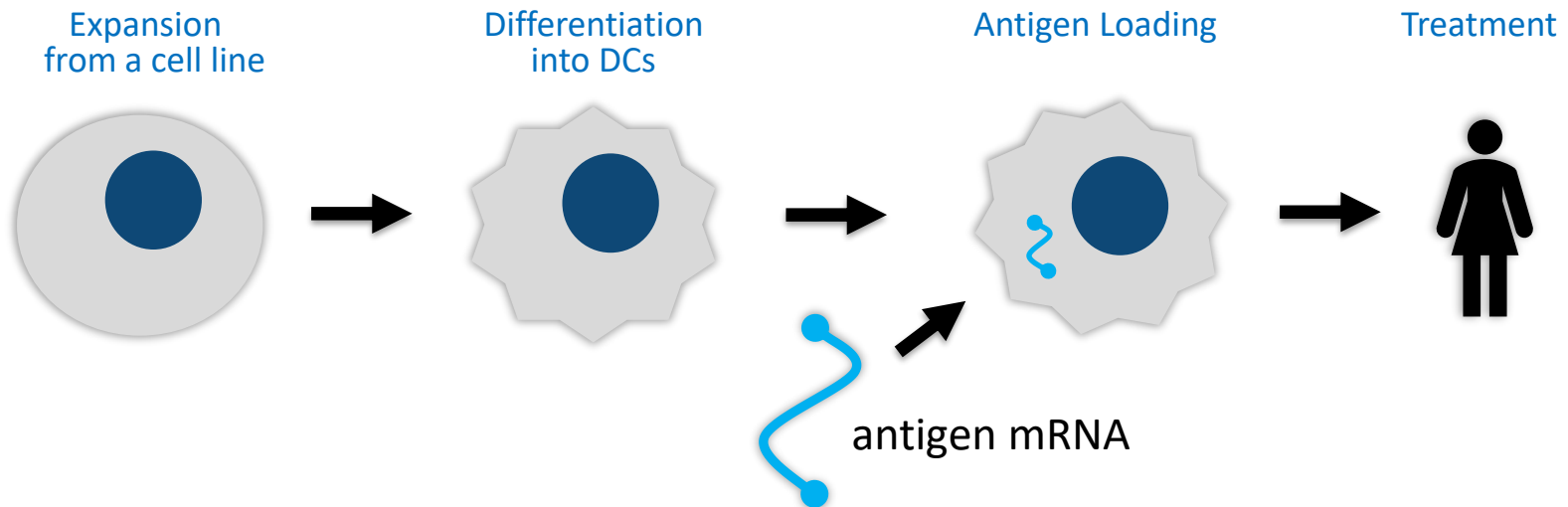
Immunotherapy is "poised to
revolutionize treatment for all
types of cancer"

Source: cancerresearch.org

**VAC: A Cell Therapy Platform
for Cancer (Immuno-Oncology)
and Infectious Disease**

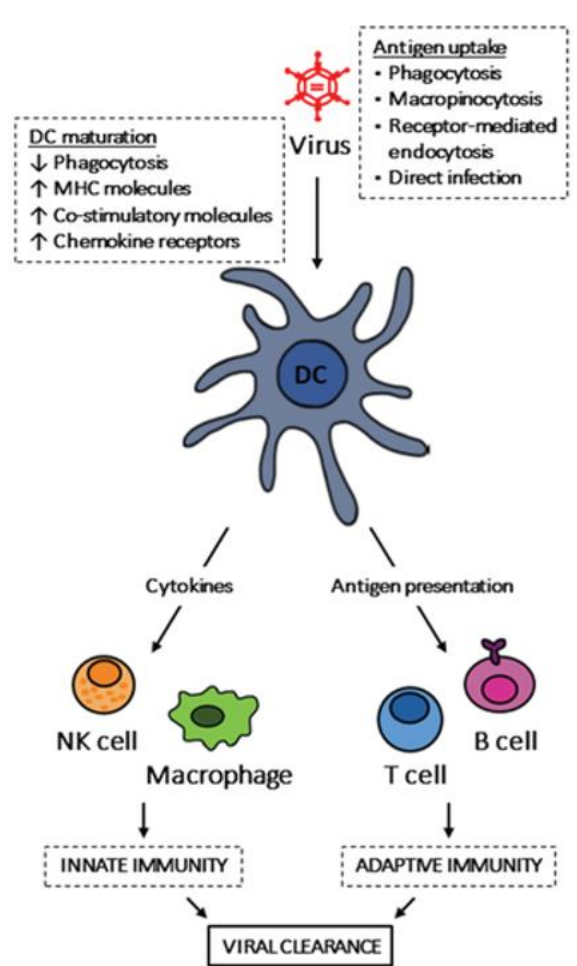
VAC Platform

- The VAC platform consists of large scale *in vitro* production of mature dendritic cells (DC)
- DCs are manufactured and loaded with either a **tumor antigen** (for cancer) or a **viral antigen** (for infectious diseases)
- Antigen presentation to the patient's T cells creates a *targeted* immune response, leading to tumor cell destruction or clearance of virus

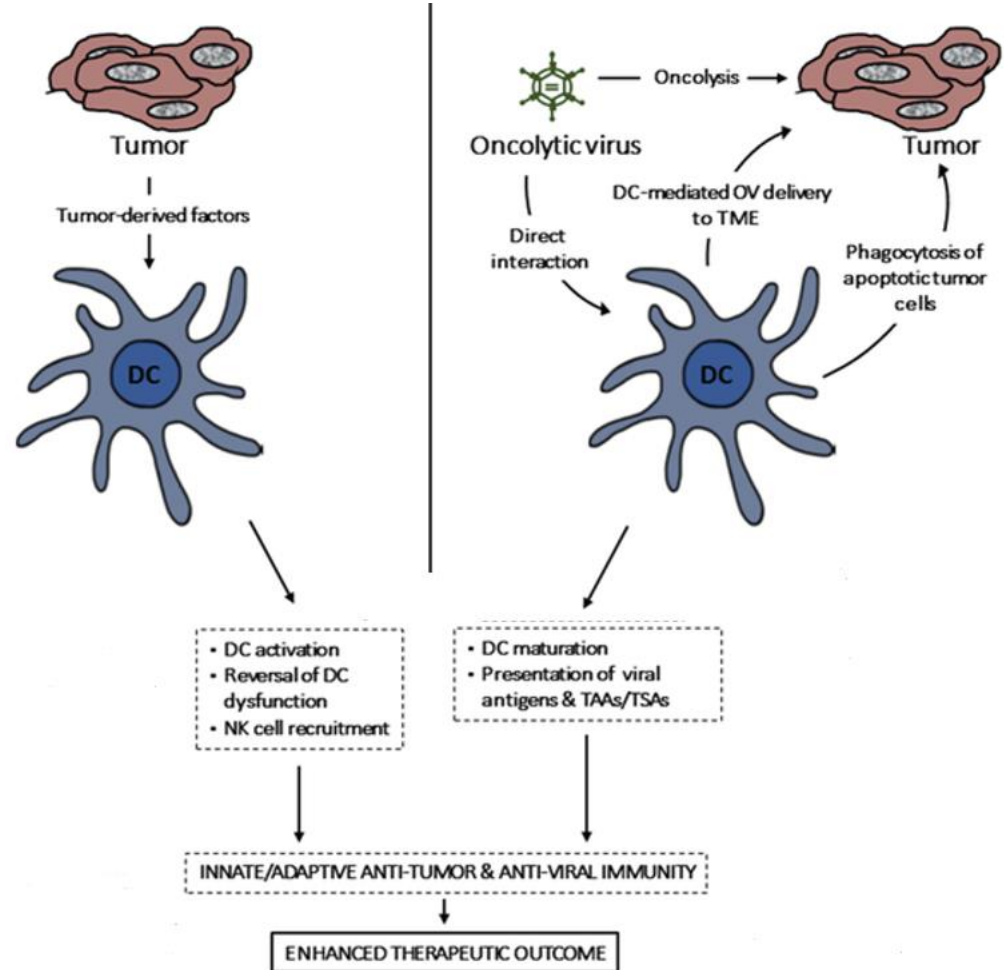


VAC Platform – Easily Adapted to Multiple Tumor Types or Emerging Pandemic Threats

Viral Infections



Cancer (including tumorviruses)



Potential Advantages of the VAC Approach for Immuno-Oncology

Attribute	VAC2
Large master cell banks for scalability and consistency	✓
Available 'off-the-shelf', on demand	✓
No known significant off-target effects	✓
Low AE-related cost of treatment	✓
Lower anticipated COGS than CAR-T	✓
Use in combination with chemotherapy	✓
Use in combination with immune checkpoint inhibitors	✓

VAC2 is designed to overcome limitations of first-generation dendritic cell therapies, providing cost and safety advantages over autologous approaches and use in combination with chemotherapy or immune checkpoint inhibitors

Potential Advantages for COVID-19 Vaccination

The goal of vaccination is to safely confer broad, durable protection through the induction of adaptive immunity

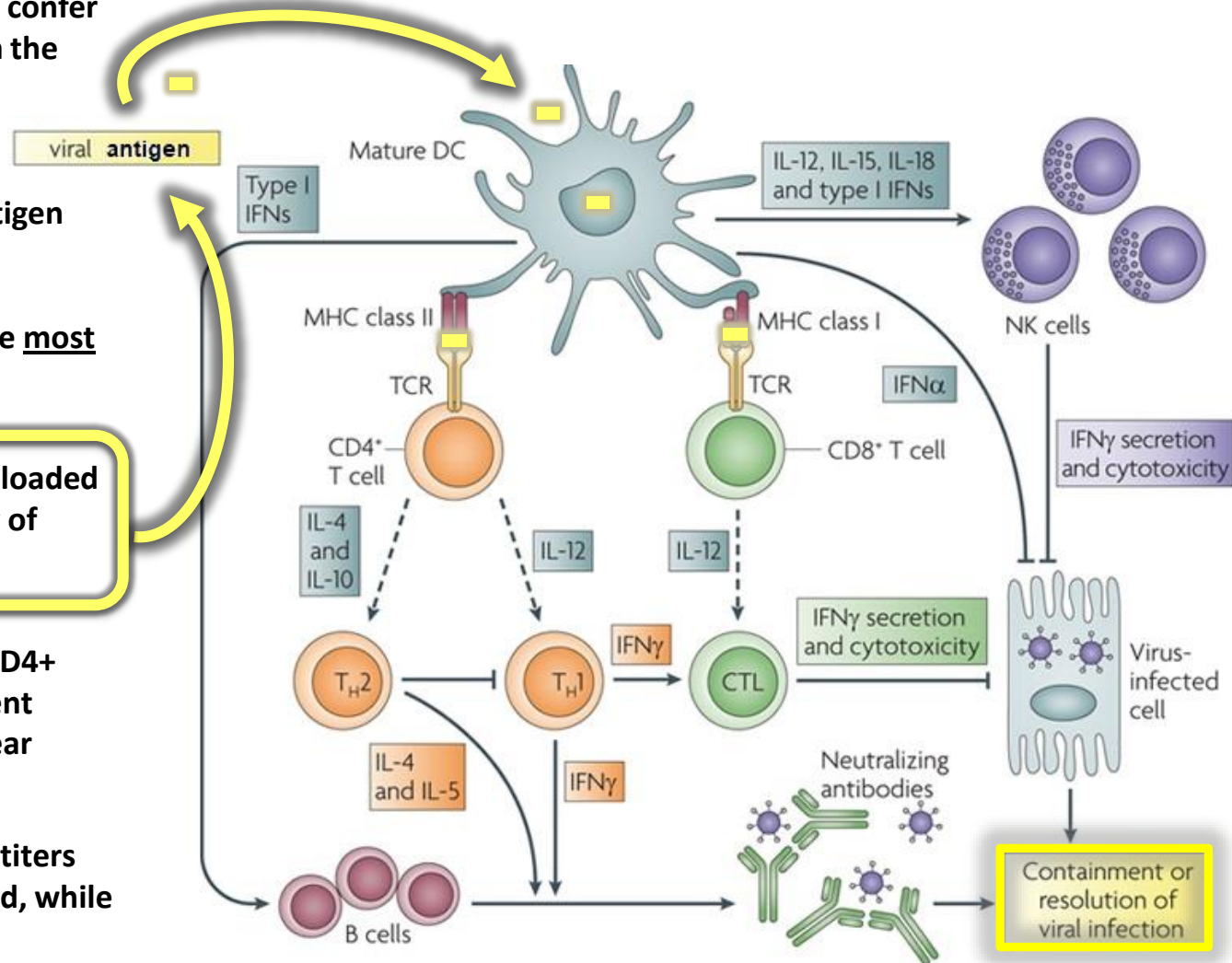
All vaccine modalities require information to be delivered by antigen presenting cells (APCs)

Dendritic cells (DCs, center) are the most potent antigen presenting cells

Mature allogeneic DCs can be pre-loaded with any antigen, ensuring fidelity of message (VAC Technology)

DCs can drive a robust CD8+ and CD4+ responses, leading to tissue resident memory cells (TRMs) and multi-year protection

SARS-CoV-1 neutralizing antibody titers and B cell responses are short-lived, while CD8+ T cells persisted 6+ years



Clinical Support for the VAC Approach

- **High levels of antigen-specific T cells have been observed in multiple clinical trials of VAC product candidates (above 3% at peak)**
 - **A strong clinical response was reported with VAC1, an earlier, autologous version of VAC2 in the setting of AML**
 - **An ongoing clinical trial of VAC2 in NSCLC further confirms mechanism-based immunogenicity**
- **Recent publications support evaluating the combination of VAC2 with checkpoint inhibitors or chemo in a phase 2 clinical trial**

VAC Platform Next Steps

Upcoming Events and Key Considerations:

- Complete dosing in ongoing clinical trial in NSCLC (n=8; 2 remain) – Q4
- Report interim clinical data from ongoing phase 1 trial of VAC2 – Q4
- Design and conduct VAC2 + checkpoint inhibitor clinical trial – 2021/2022
- Design new products (i.e. VAC3, 4, 5, 6...) with newly discovered tumor antigens/neoantigens
- Apply for grant support for VAC-COVID-19 vaccine – CIRM, BARDA, CEPI



Lifetime care for an SCI
patient can cost nearly
\$5 million

Source: christopherreeve.org

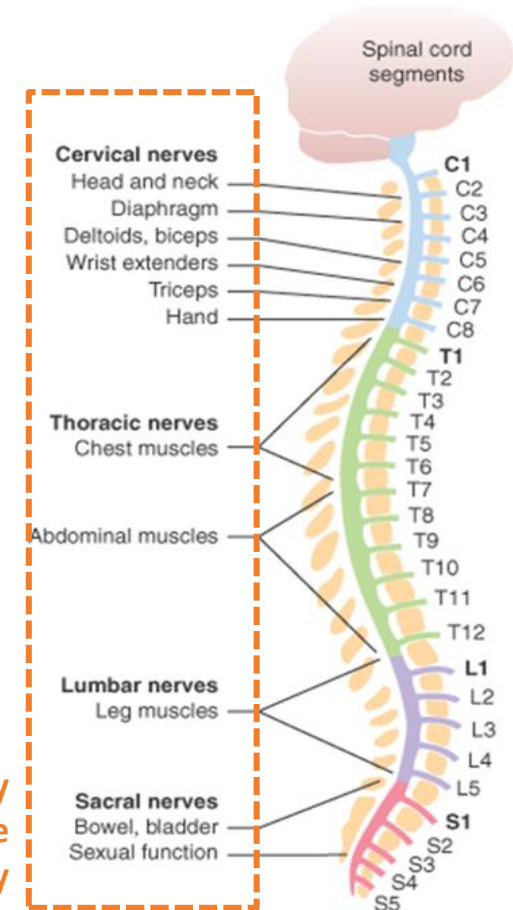
**OPC1: A Cell Therapy Product Candidate
for Spinal Cord Injury**

OPC1 in Spinal Cord Injury

The therapeutic goal of OPC1 is to provide additional upper extremity function (arm, fingers) and improve quality of life through independence

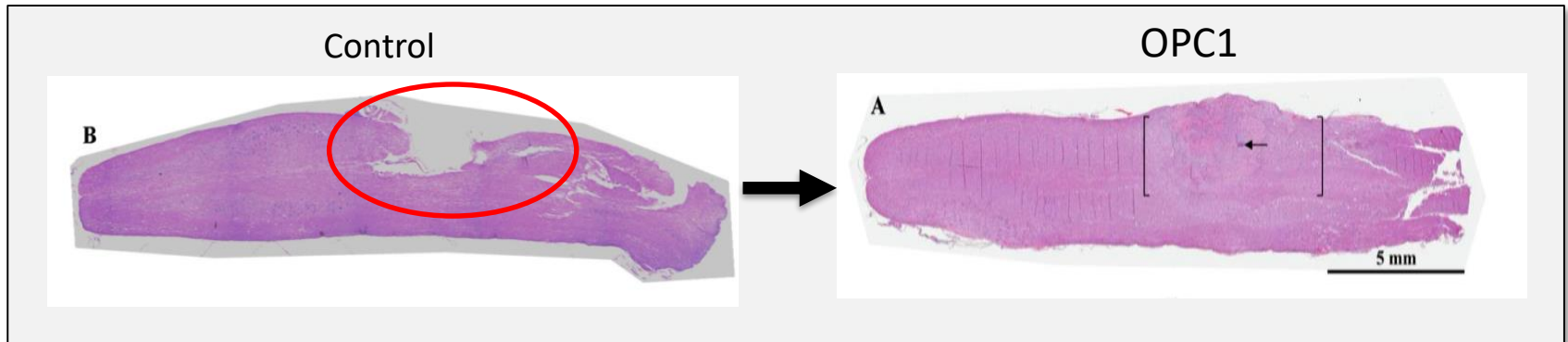
- OPC1 consists of manufactured oligodendrocyte progenitor cells (OPCs)
- Cells are injected into the spinal cord of patients
- OPCs are the cells which provide electrical insulation for nerve axons in the form of a myelin sheath
- RMAT Designation & Orphan Drug Designation
- \$14M of support from CIRM

Loss of motor activity is the primary feature of a spinal cord injury

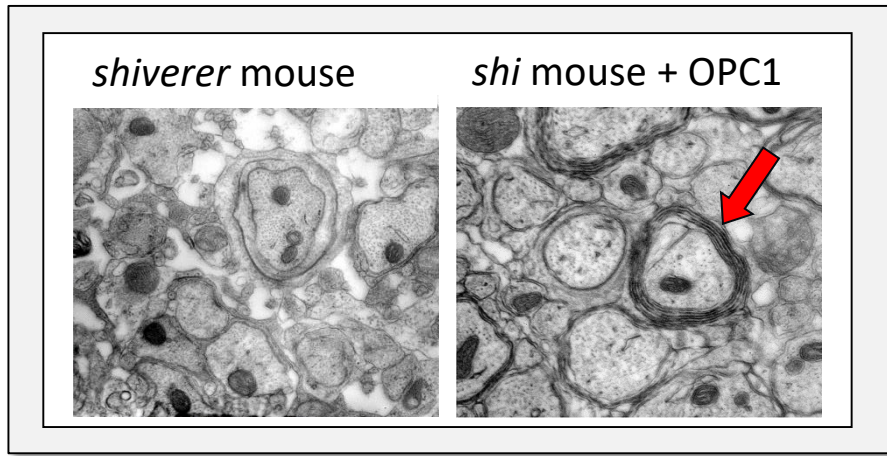


OPC1 Mechanisms of Action

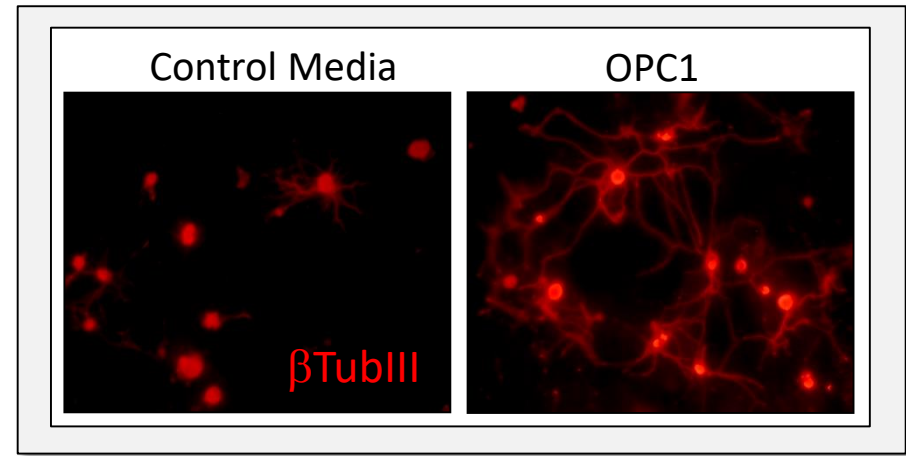
1. Prevention of Cavitation



2. Myelination of axons



3. Secretion of neurotrophic factors



Safety and Efficacy from OPC1 Phase 1/2a Study

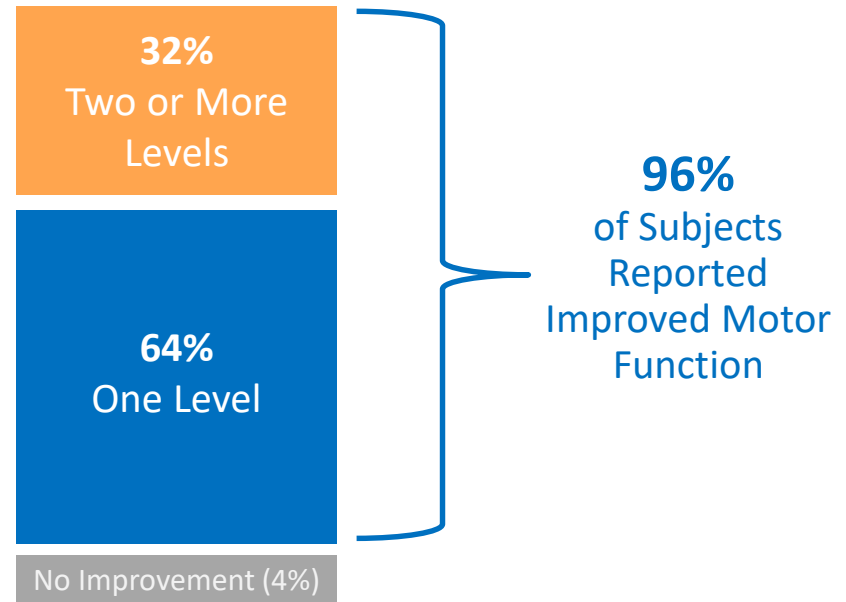
Cell Engraftment

(cohorts 2-5 at 12 months, n=22*)



Motor Function Gain

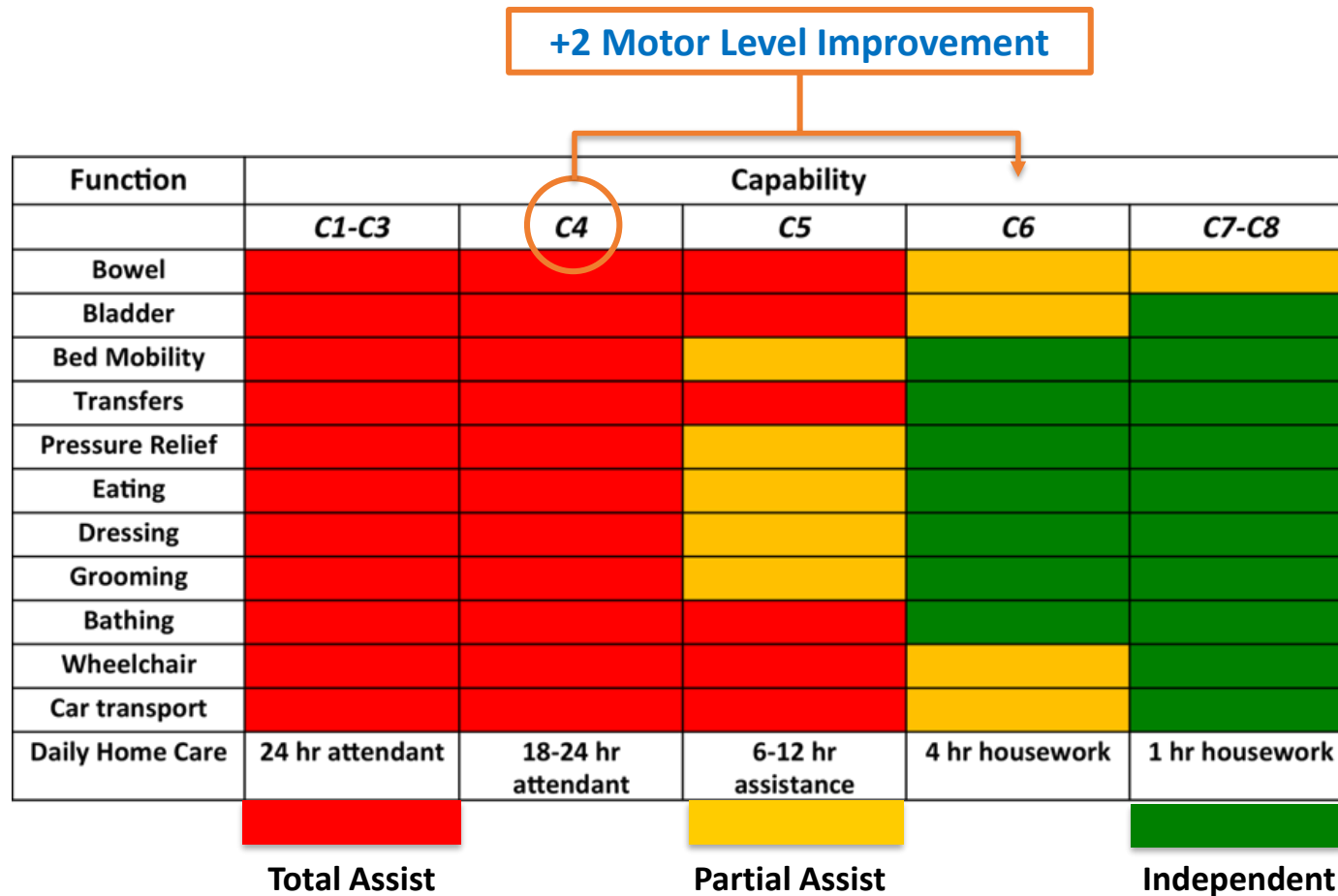
(cohorts 2-5 at 12 months, n=22*)



To date, there have been no serious adverse events related to the OPC1 cells

Real-World Benefit of Motor Level Gains

Motor level gains translate into clinically meaningful improvements in self-care and reductions in cost of care



Lucas' Story



Lucas Linder, an OPC1 clinical trial participant, was paralyzed from the neck down. The next year, he threw out the first pitch at a Major League Baseball game.

Spinal Cord Injury Program: Next Steps

Upcoming Events and Key Considerations:

- Complete process development improvements to support late-stage clinical trial
- Evaluate delivery device solutions to access a greater number of clinical sites
- Discuss regulatory path for phase 2/3 with FDA
- Consider regional and/or global partnership opportunities

Financial Overview

Cash, Cash Equivalents and Marketable Securities

(As of 3/31/2020)

~\$25.8 mm

Convertible Note Receivable from Juvenescence

(At maturity date: 8/30/2020)

~\$24.6 mm

Debt

None

Market Capitalization

(As of 6/17/2020)

~\$159 mm

Employees

(As of 6/17/2020)

53

A new management team and prioritization of clinical cell therapy programs have resulted in a more efficient and cost-effective business model

Why Invest in Lineage?

Lineage is well-positioned for near-term growth and long-term value



3 clinical-stage programs with billion dollar potential



World class in-house GMP manufacturing



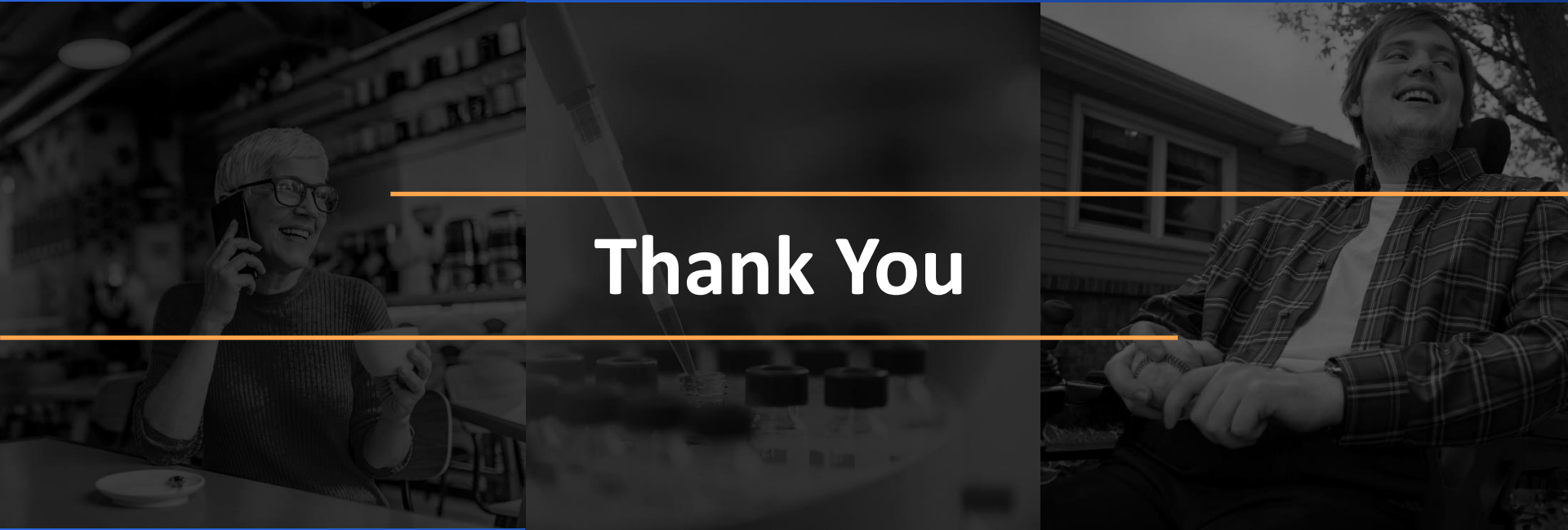
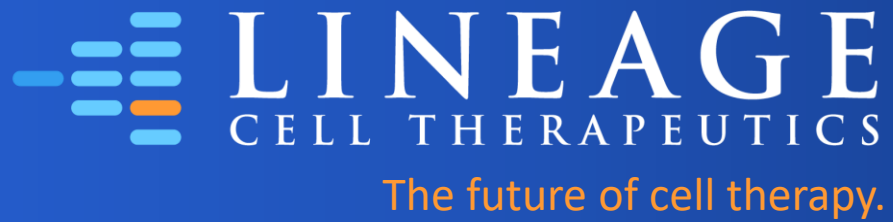
One of the largest patent portfolios in cell therapy



Funded well into 2021* with cost-efficient business model



Leader in the emerging field of regenerative medicine



Thank You

lineagecell.com

NYSE American: LCTX