LINEAGE
CELL THERAPEUTICS

The future of cell therapy.



Corporate Overview

January 6, 2021

Forward-Looking Statements

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All statements in this presentation, other than statements of historical fact, are forward-looking statements within the meaning of federal securities laws. In some cases, you can identify forward-looking statements by terms such as “may,” ”will,” “expect,” “plan,” “anticipate,” “strategy,” “designed,” “could,” “intend,” “believe,” “estimate,” “target,” or “potential” and other similar expressions, or the negative of these terms. Forward-looking statements involve risks, uncertainties and assumptions that may cause Lineage’s actual results, performance, or achievements to be materially different from those expressed or implied by the forward-looking statements in this presentation, including risks and uncertainties inherent in Lineage’s business and other risks described in Lineage’s filings with the Securities and Exchange Commission (SEC). Lineage’s forward-looking statements are based upon its current expectations and involve assumptions that may never materialize or may prove to be incorrect. All forward-looking statements are expressly qualified in their entirety by these cautionary statements. Further information regarding these and other risks is included under the heading “Risk Factors” in Lineage’s periodic reports filed with the SEC, including Lineage’s Annual Report on Form 10-K filed with the SEC on March 12, 2020 and its other reports, which are available from the SEC’s website. You are cautioned not to place undue reliance on forward-looking statements, which speak only as of the date on which they were made. Lineage undertakes no obligation to update such statements to reflect events that occur or circumstances that exist after the date on which they were made, except as required by law.

Management Biographies

BRIAN CULLEY, CEO

Mr. Culley joined Lineage as CEO in September 2018. Prior to joining Lineage, Mr. Culley served from August 2017 to September 17, 2018 as Interim Chief Executive Officer at Artemis Therapeutics, Inc., where he was responsible for the management of the company. Mr. Culley previously served as Chief Executive Officer of Mast Therapeutics, Inc. ("Mast"), from February 2010, and was also a member of its Board of Directors from December 2011, until Mast's merger with Savara, Inc. in April 2017. Mr. Culley served from January 2007 to February 2010 as Mast's Chief Business Officer and Senior Vice President, from February 2006 to January 2007 as Mast's Senior Vice President, Business Development. From 2002 until 2004, Mr. Culley was Director of Business Development and Marketing for Immusol, Inc. From 1999 until 2000, he worked at the University of California, San Diego (UCSD) Department of Technology Transfer & Intellectual Property Services and from 1996 to 1999 he conducted drug development research for Neurocrine Biosciences, Inc. Mr. Culley has more than 25 years of business and scientific experience in the life sciences industry. He received a B.S. in biology from Boston College, a masters in biochemistry and molecular biology from the University of California, Santa Barbara, and an M.B.A. from The Johnson School of Business at Cornell University.

BRANDI ROBERTS, CFO

Ms. Roberts joined Lineage as CFO in January 2019. Prior to joining Lineage, Ms. Roberts served from August 2017 to January 4, 2019 as Chief Financial Officer at REVA Medical, Inc. Ms. Roberts previously served as Chief Financial Officer at Mast Therapeutics, Inc., a publicly traded US-based biopharmaceutical company, from January 2013 to April 2017, having served as the Company's Senior Vice President, Finance from March 2011 to January 2013. Previously, she held senior positions at Alphatec Spine, Artes Medical, Stratagene and Pfizer. Ms. Roberts brings more than 23 years of public accounting and finance experience, including 20 years at publicly traded pharmaceutical, medical technology, and life science companies to her position. Ms. Roberts is a certified public accountant with the State of California and received her B.S. in Business Administration from the University of Arizona and her M.B.A. from the University of San Diego. Ms. Roberts serves on the board of Temple Therapeutics BV. She also currently serves as Chair of the Southern California Chapter of the Association of Bioscience Financial Officers.

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Lineage Cell Therapeutics – Investor's Overview

Innovative Approach	- Transplanting "off the shelf" cells to treat serious medical conditions
Unique Advantage	- World-class manufacturing and IP; can manufacture an unlimited supply of specialized cell types from established pluripotent cell lines
Three Clinical Stage Programs	- **OpRegen**: Phase 1/2a in Dry Age-Related Macular Degeneration with GA - **OPC1**: Phase 1/2a in Cervical Spinal Cord Injury - **VAC2**: Phase 1 in oncology (non-small cell lung cancer + platform)
Compelling Data	- First-ever report of retinal tissue *restoration* in a dry AMD patient - One-third of spinal cord patients gained *2 levels* of motor function - Potent *induction of immune responses* observed in cancer patients
Market Opportunities	- Billion-dollar commercial potential for each program
Near-Term Clinical News	- 3- and 6-month data from dry AMD program, expected Q1 and Q2 - Completion of enrollment in Phase 1 lung cancer trial, expected Q1
Strong Financial Position	- Cash and marketable securities of $38 million as of September 30, 2020
Market Capitalization	~$264 million as of December 31, 2020

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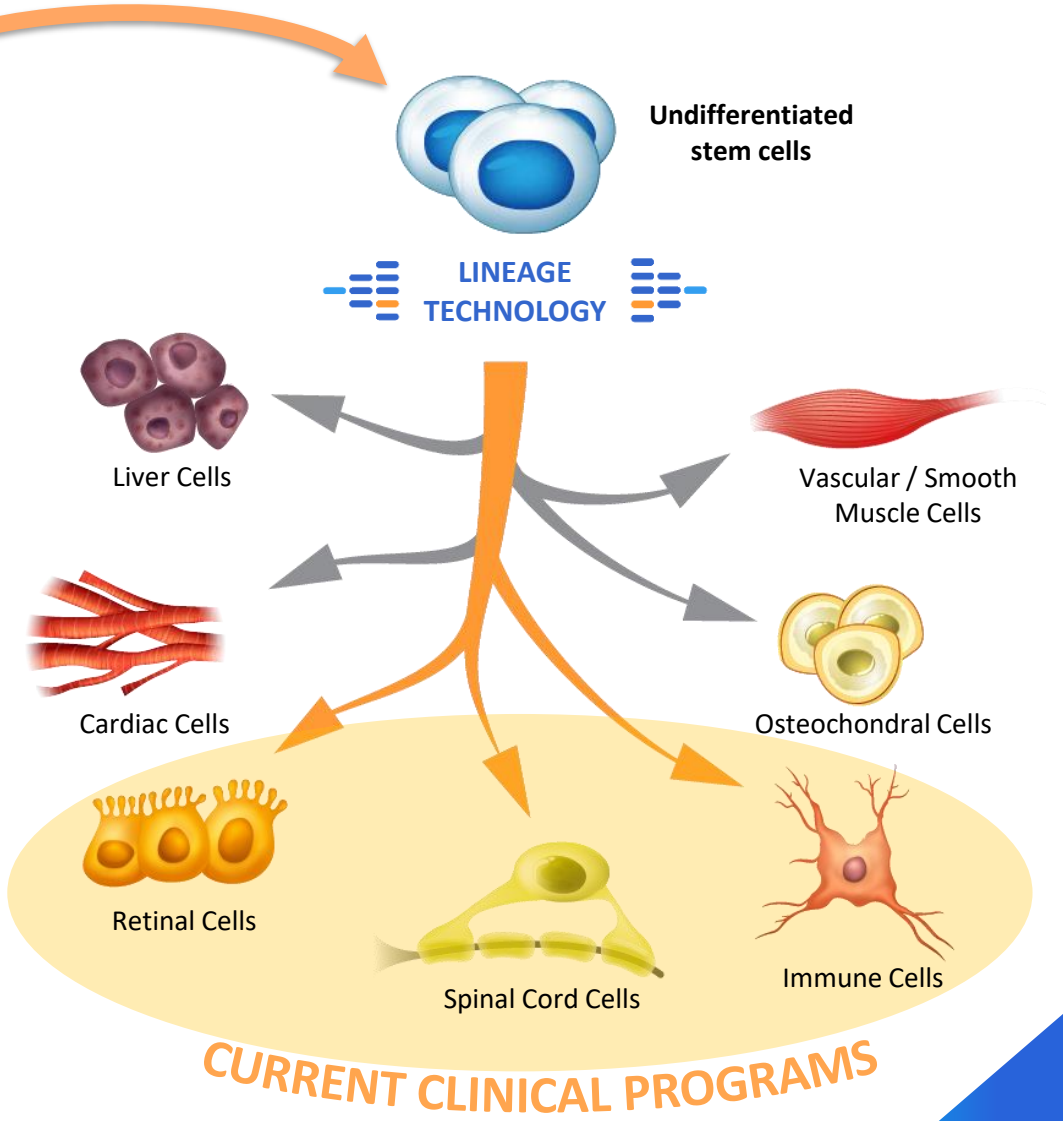
"We aim to pioneer a new branch of medicine, based on transplanting specific cell types into the body"

Technology Overview

Lineage Technology Platform – Allogeneic Cell Transplants

- **The Lineage Platform starts with a frozen vial of *self-renewing stem cells***
- **These pluripotent cells can become *any* cell type in the body**
- **Lineage's proprietary processes create *only* the cell type which is desired**
- **No alterations are made to the cell's DNA**
- **Commercial-scale production occurs from a single vial of cells**



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Competitive Advantage: In-House Manufacturing and Know-How

Lineage's competitive advantage is the *differentiation* of an *unlimited* supply of pluripotent stem cells into specialized cell types

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)

Backed by hundreds of cell therapy-related patents

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Pipeline and Validating Partnerships

Clinical Programs	Financial Support Received	Phase 1	Phase 2a	Next Steps
OpRegen® (RPE Cells) Dry AMD with Geographic Atrophy (GA)	רשות החדשנות Israel Innovation Authority **$16M**	→		Enrollment completed; data in Q1 and Q2
OPC1 (Oligodendrocytes) Spinal Cord Injury (SCI)	CIRM CALIFORNIA'S STEM CELL AGENCY **$14M**	→		Data collected; planning for Phase 2b/3
VAC2 (Dendritic Cells) Non-Small Cell Lung Cancer (NSCLC)	CANCER RESEARCH UK **$10M**	→		2 patients left to enroll

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

Source: aao.org

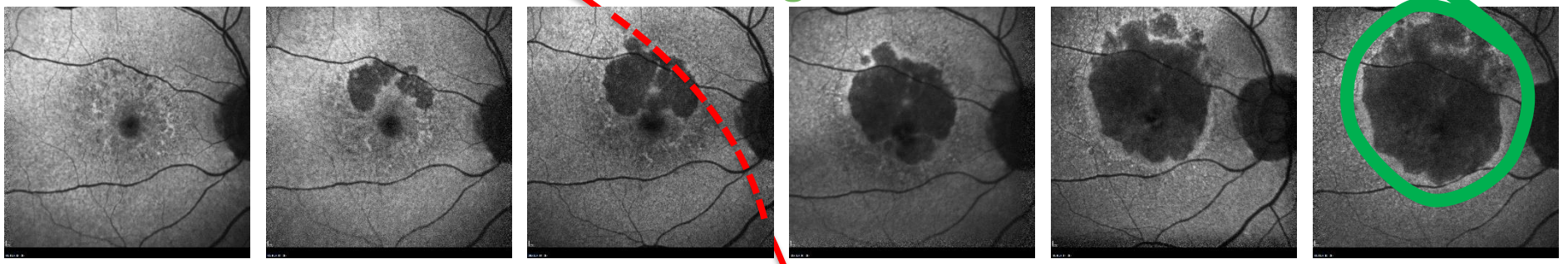
OpRegen®: RPE Cell Transplants to Treat Dry AMD

Dry AMD Can Lead Rapidly to Blindness

Visual acuity over time…

20/20 (normal)

The area of geographic atrophy or "GA" grows larger as retinal cells die



2012 2013 2014 2015 2017 2019

20/200 (legally blind in 3 years)

20/640

Dry AMD involves the progressive loss of retina cells, which can lead rapidly to blindness

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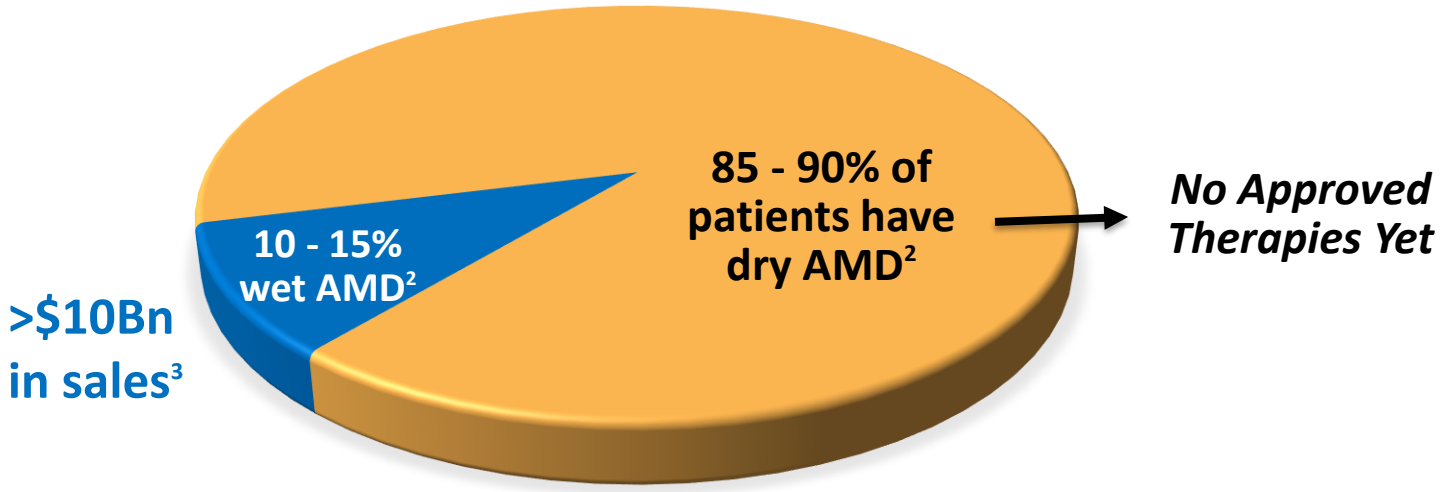
Multi-Billion Dollar Market Opportunity in the U.S.

Age-related Macular Degeneration (AMD) (all forms) afflicts ~11 million people in the United States

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



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 Schachat, 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.

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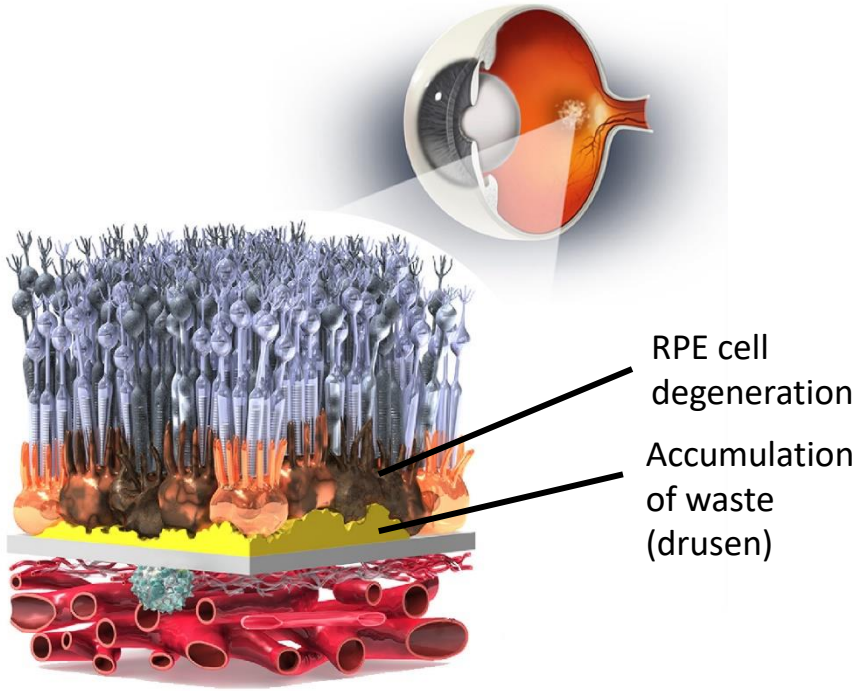
Lineage Approach – OpRegen, an RPE Cell Transplant

- **Dry AMD involves the loss of retina cells, creating an area of geographic atrophy (GA), which causes impaired vision and blindness**



- **OpRegen is an injection of RPE cells directly to the retina, to replace lost retinal cells and preserve or improve vision**

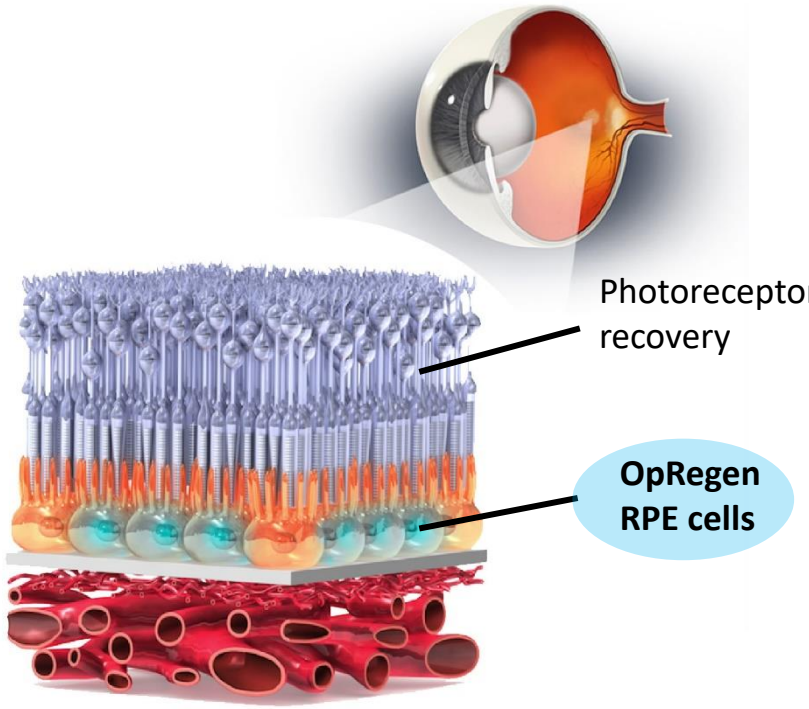


Image adapted from scienceofamd.org

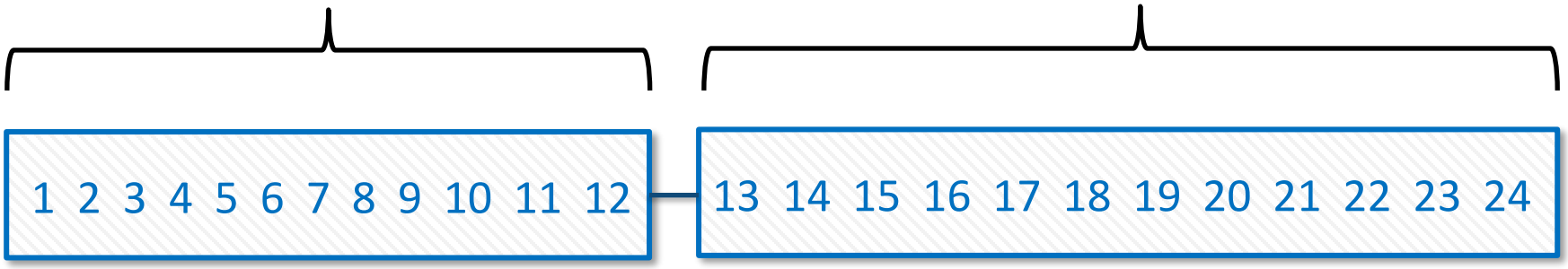
Ongoing Phase 1/2a Clinical Trial of OpRegen for Dry AMD

Cohorts 1-3

Safety Portion / Legally Blind

Cohort 4

Efficacy Portion / Impaired Vision



COMPLETED

ENROLLMENT COMPLETED 11/10/2020

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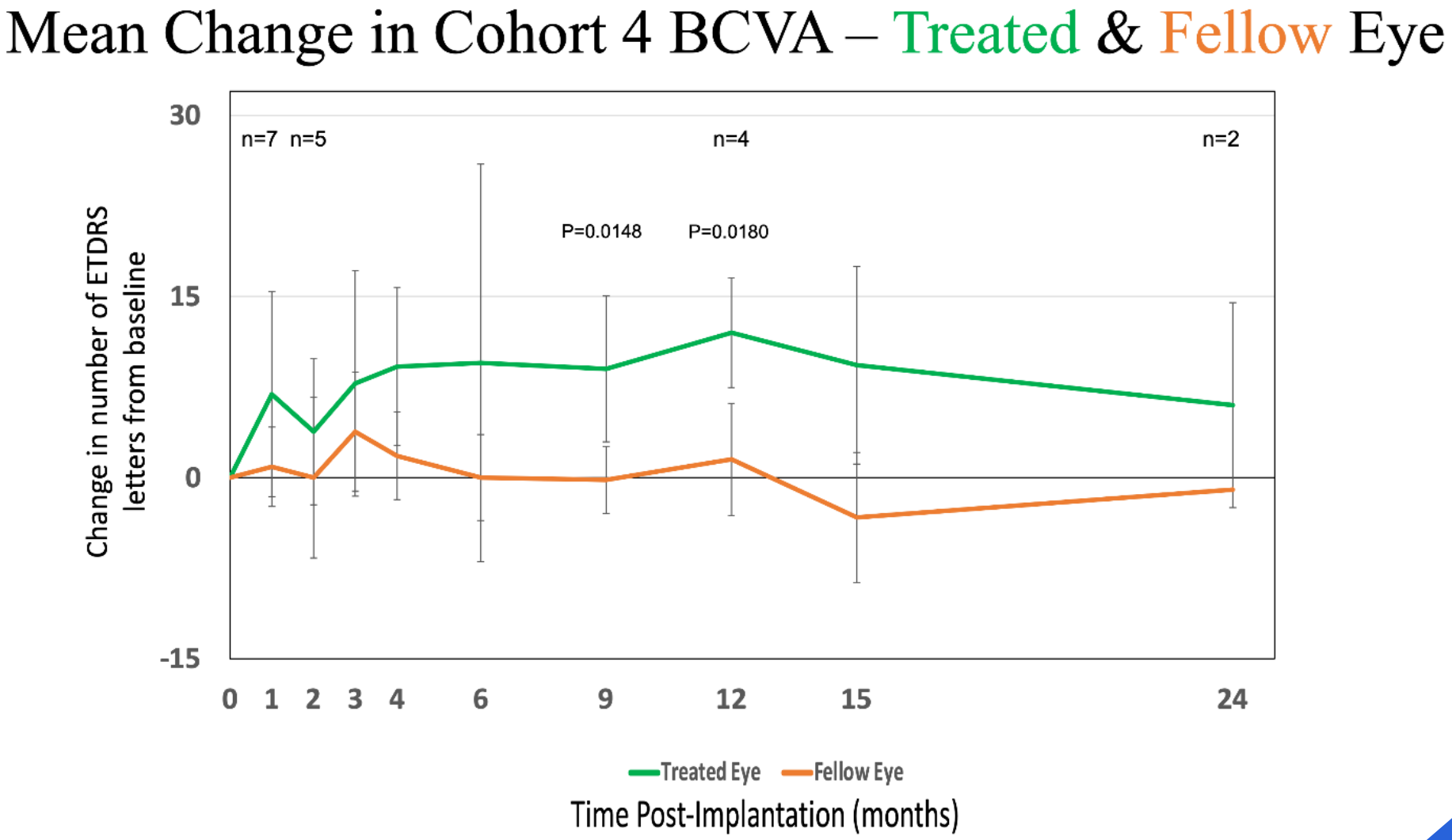
Promising Results
(As of AAO 2020 Update)

- **The transplanted OpRegen cells have been well tolerated with no cases of rejection**
- **Cohort 4 patients (the intended commercial population) have better vision at 9 & 12 months, with improvements lasting >24 months in some patients**
- **A trend towards slower GA growth was observed in first 6 Cohort 4 patients, also maintained for as long as 24 months in some patients**
- **Encouraging findings across unrelated assessments; various patients have exhibited evidence for one or more of:**
  1. **Reduced growth of geographic atrophy**
  2. **Improved visual acuity**
  3. **Improved reading speed**
  4. **Improved retina structure**
  5. **Reductions in waste material**
  6. **Stable engraftment of cells (4+ years)**
  7. **Restoration of retinal tissue maintained to 23 months (continuing to monitor)**

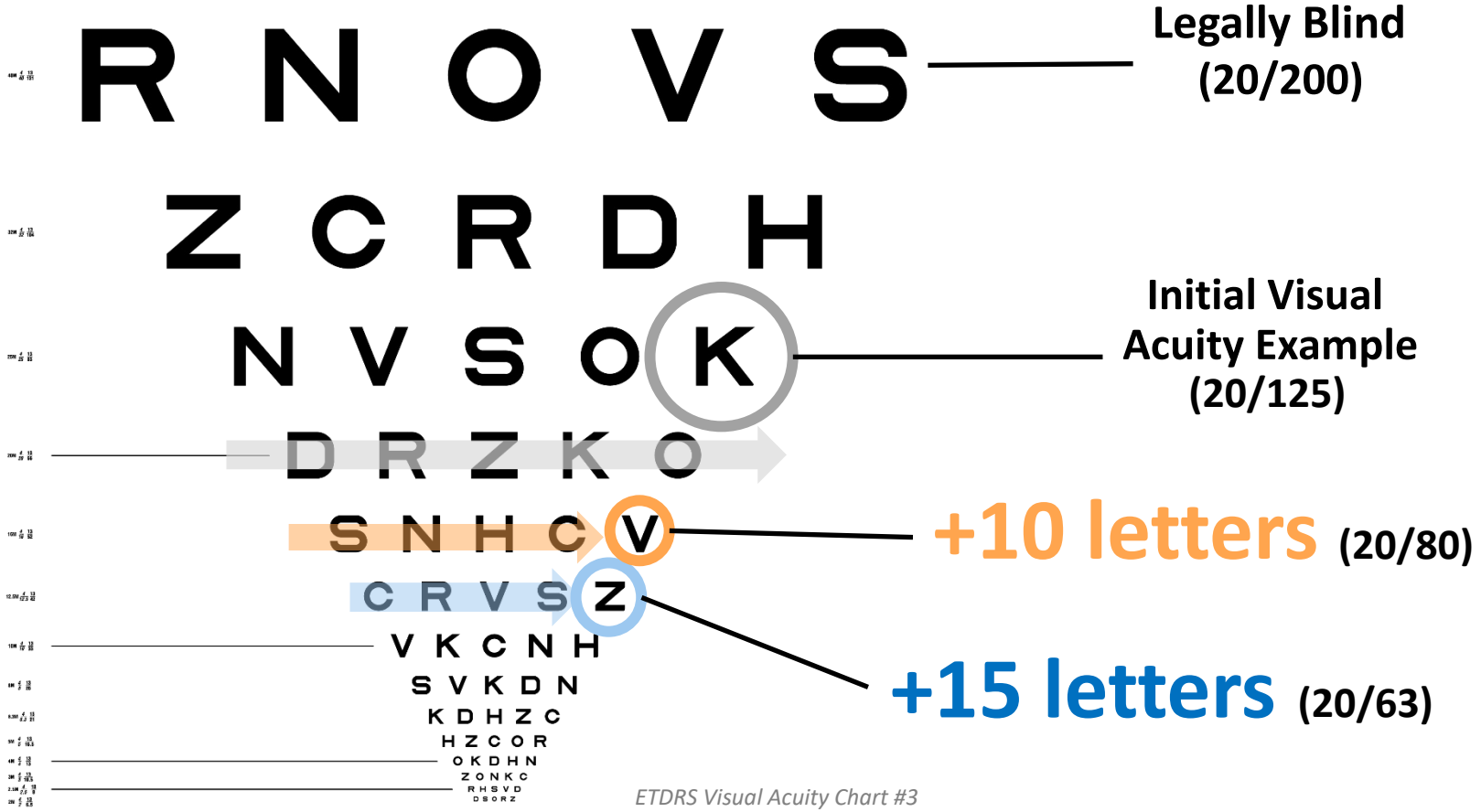
Improved Visual Acuity in Treated vs. Fellow Eye

Statistical Significance at 9 & 12 Months



(As Presented at 2020 AAO)

Real-World “Letters of Improvement”



ETDRS Visual Acuity Chart #3

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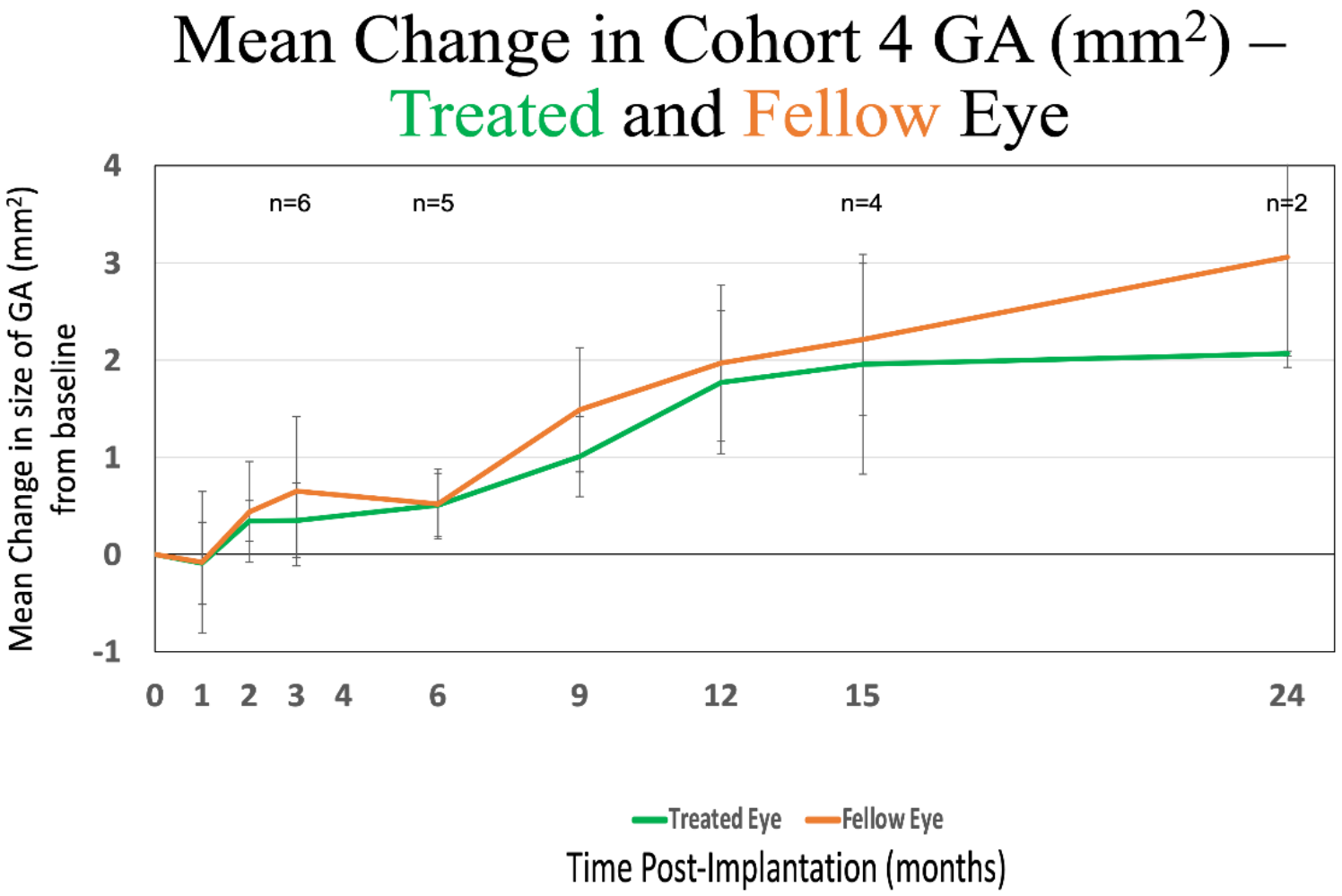
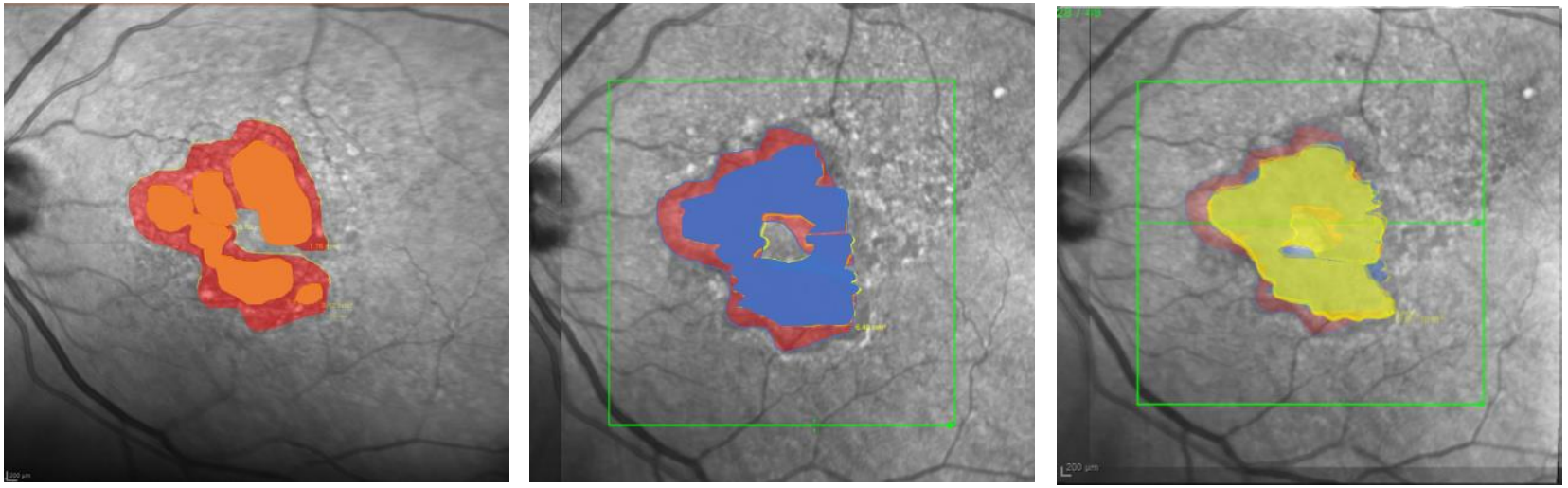
Slower Growth of GA Observed in Pooled Cohort 4 Patients



(As Presented at 2020 AAO)

Retinal Restoration – *Smaller* Area of GA, Maintained for 2 Years

Date	Time in Study	Colored area on Figure below	Area mm^2 (SQRT)	Changes in rate of progression from previous	Changes in rate of progression from baseline
May 2017	Minus 1 year	Orange	4.21 mm^2 (2.05)	N/A	N/A
July 2018	Baseline	Red	7.90 mm^2 (2.8)	+ 0.64 mm sqrt/yr	N/A
April 2019	Month +9	Blue	5.74 mm^2 (2.39)	- 0.61 mm sqrt/yr	- 0.61 mm sqrt/yr
October 2019	Month +15	Green	6.48 mm^2 (2.54)	+ 0.30 mm sqrt/yr	- 0.20 mm sqrt/yr
June 2020	Month +23	Yellow	6.52 mm^2 (2.55)	+ 0.015 mm sqrt/yr	- 0.13 mm sqrt/yr



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(As Presented at 2020 AAO)

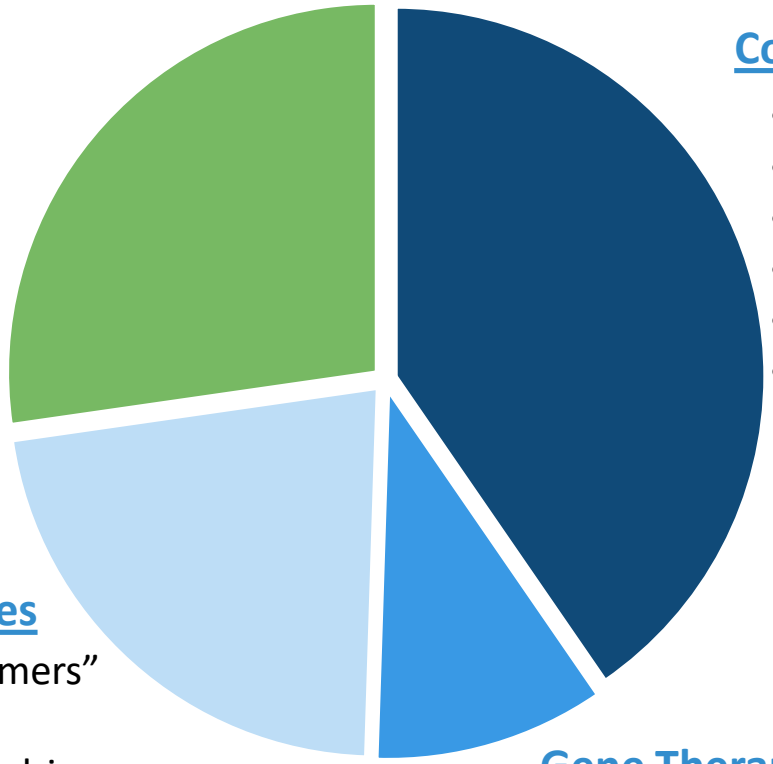
Dry AMD Competitive Landscape

<u>Only</u> cell therapy has the potential to restore tissue with infrequent dosing
<u>Only</u> Lineage has shown evidence of retinal restoration
<u>Only</u> Lineage has access to the Gyroscope delivery system to deliver cells

Cell Therapy

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

Via acquisition of Ocata Therapeutics for $379M



Complement Inhibitors

- Apellis (Ph3)
- Iveric (Ph3)
- Roche (Ph2)
- Annexon (Ph 2)
- NGM (Ph1)
- Biogen (Preclinical)

Oxidative Stress Approaches

- Alkeus (Ph3), Vitamin A “dimers”
- Allegro (Ph2), integrins
- Stealth Bio (Ph2), mitochondria
- Boehringer (Ph1), inflammasome

Gene Therapy

(also targeting complement)

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

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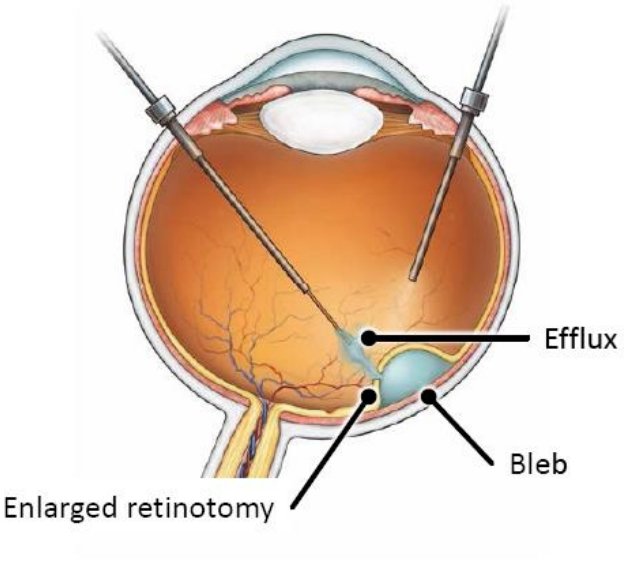
Proprietary Delivery System – The Gyroscope SDS

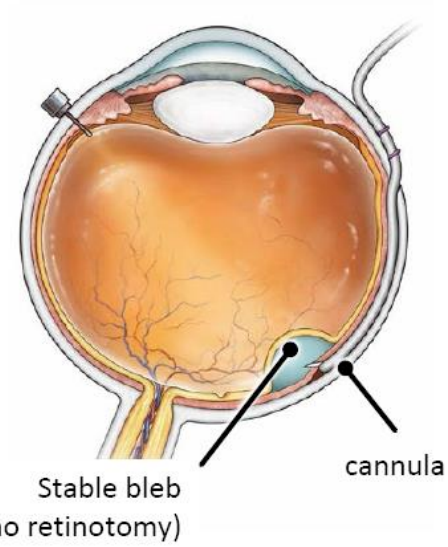
Lineage has an exclusive option to a delivery device which overcomes issues with the traditional method of delivering cells to the retina

Traditional Method (safety issues)



- The traditional method punctures the retina; cells then efflux (pass) into the vitreous cavity, causing adverse events (ERMs)
- ERMs were observed in 14 out of 17 patients

Gyroscope SDS (Lineage method)



- With the Gyroscope SDS, no retinotomy is performed, providing better dose control
- No patients formed an ERM after using the Gyroscope SDS (n=7, p=<0.001 versus traditional method)

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Lineage has an exclusive option on the use of Gyroscope SDS to deliver cells for dry AMD

Commercial-Scale Manufacturing Capabilities

- **OpRegen consists of >99% pure RPE cells**
  - Uses NIH-approved line was established >20 years ago
  - Extensive characterization and karyotyping performed on each batch
  - No genetic modifications are made to the cells

- **Immediate-use "thaw and inject" formulation**
  - No dose preparation is required
  - From frozen cells to injection device in 5 minutes

- **Current production scale is 5 billion cells per 3-liter bioreactor**
  - Equal to 2,500 clinical doses/batch
  - Further scale-up can be performed in larger or parallel reactors

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OpRegen – Positioned for Commercial Success

OpRegen has been designed to capture a multi-billion dollar opportunity:

- **Transplanting RPE cells may provide benefits other approaches cannot**
- **Market opportunity is not limited to monogenic deficiencies (e.g. gene therapy)**
- **Treatment to date has been well-tolerated**
- **Some patients have exhibited clinically meaningful improvements in clinically-relevant metrics such as visual acuity and reading speed**
- **Potential for recurring revenues (with multiple treatments years apart)**
- **May have application in other retina diseases (Stargardt's Disease)**
- **Issued patents cover aspects of production, characterization, and formulation**
- **Fast Track designation from FDA**
- **Exclusive rights to unique delivery device**
- **Opportunities for strategic partnerships for late-stage development**

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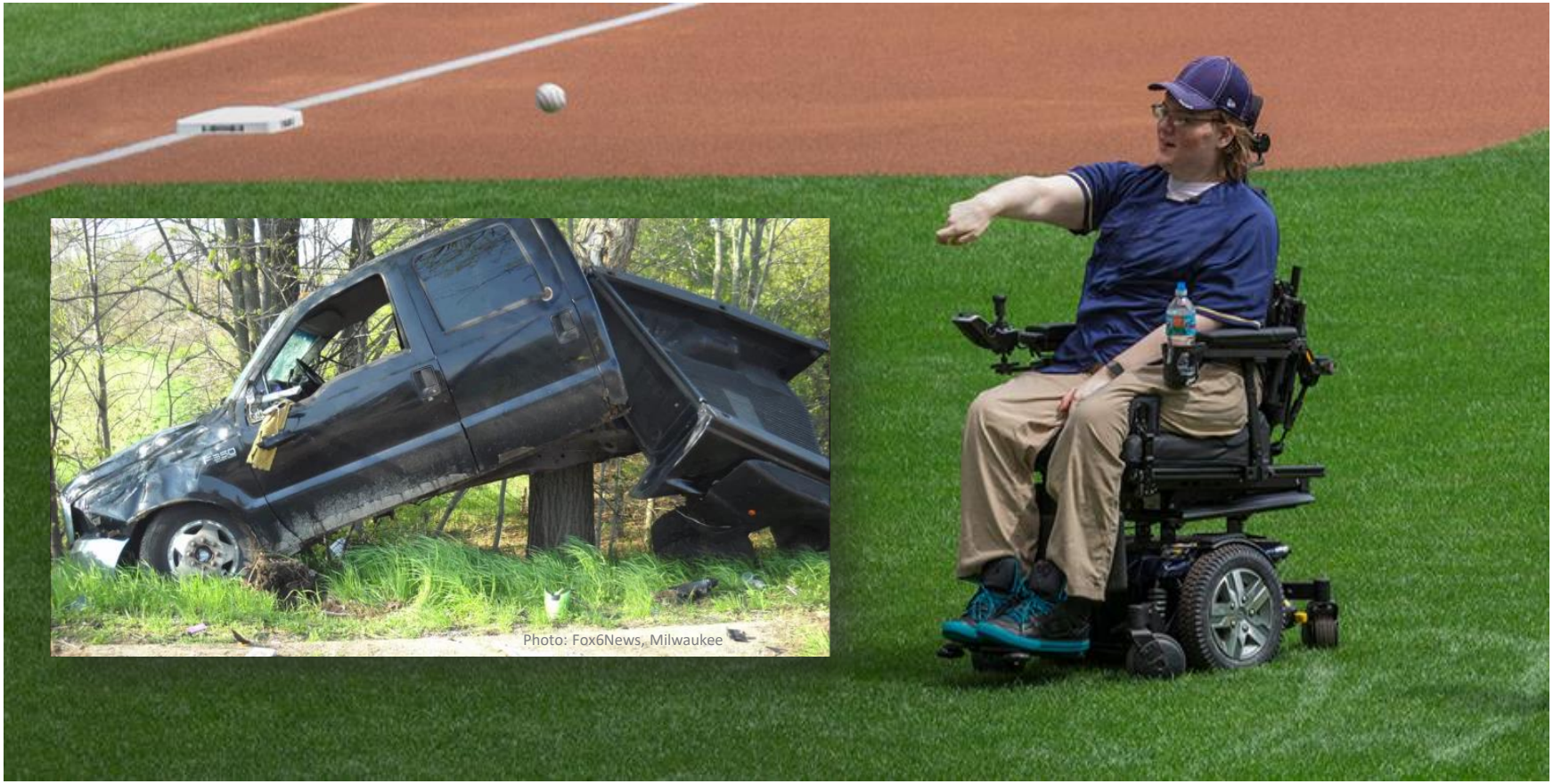
Lifetime care for an SCI patient can cost nearly $5 million

Source: christopherreeve.org

OPC1: A Cell Therapy for Spinal Cord Injuries

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.

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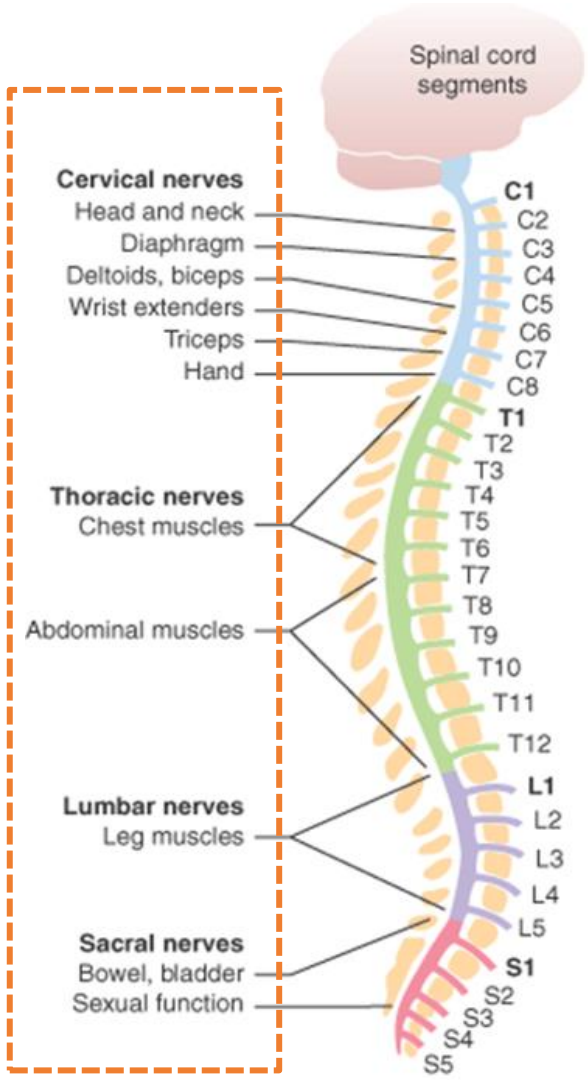
About Spinal Cord Injury

- **Loss of movement is the primary feature of a spinal cord injury**
- **The goal of treatment is to provide additional upper extremity function (limb, hand & fingers)**
- **Greater mobility leads to improved quality of life and independence for patients**
- **Approx 18,000 persons per year in the US (Orphan Drug Designation received)**
- **Individual cost of care can reach as high as $5M dollars**



(*) National SCI Statistical Center, 2019 SCI Data Sheet.

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Spinal Cord Injuries are Measured by Motor Levels

Higher-level injuries are associated with less mobility

Function	Cervical Injury Level				
	C1-C3	C4	C5	C6	C7-C8
Bowel					
Bladder					
Bed Mobility					
Transfers					
Pressure Relief					
Eating					
Dressing					
Grooming					
Bathing					
Wheelchair					
Car transport					
Daily Home Care	24 hr attendant	18-24 hr attendant	6-12 hr assistance	4 hr housework	1 hr housework

Total Assist | Partial Assist | Independent

Activities of Daily Living across different levels of motor function after cervical complete SCI
Modified from Whiteneck et al. 1999)

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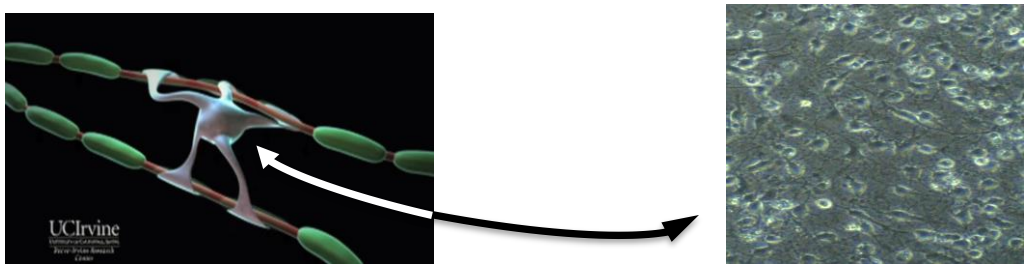
Lineage **OPC1 cells** for Spinal Cord Injury

Healthy oligodendrocytes, which support and myelinate neurons, can be damaged and lost due to inflammatory response following an injury



OPC1 is a cellular therapy comprised of oligodendrocyte progenitor cells (OPCs) which are derived from a pluripotent cell line and injected into the patient's spinal cord

Demonstrated OPC1 activities:

- **Remyelinate axons**
- **Remodel tissues: neovascularization and prevention of cavitation**
- **Promote neurite growth**
- **Improve motor function**

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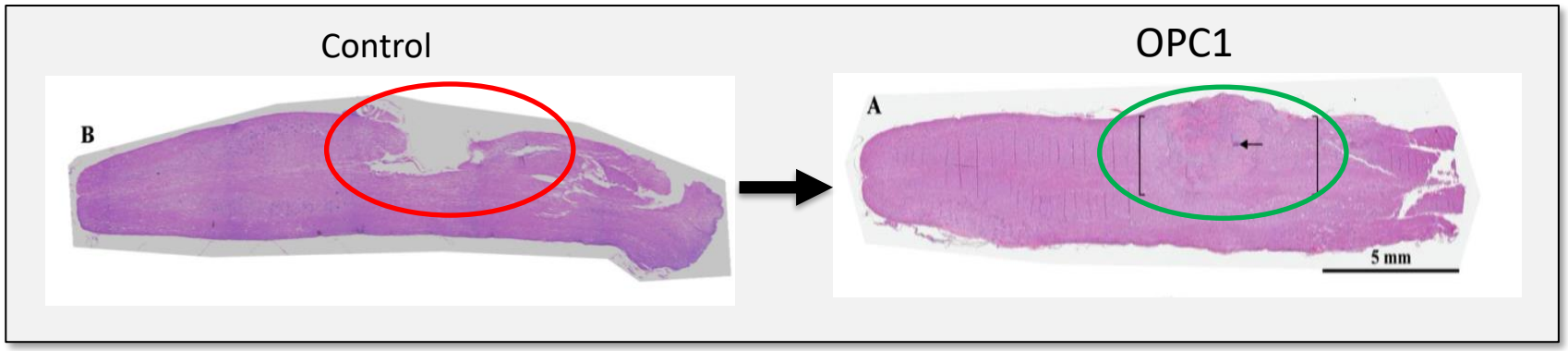
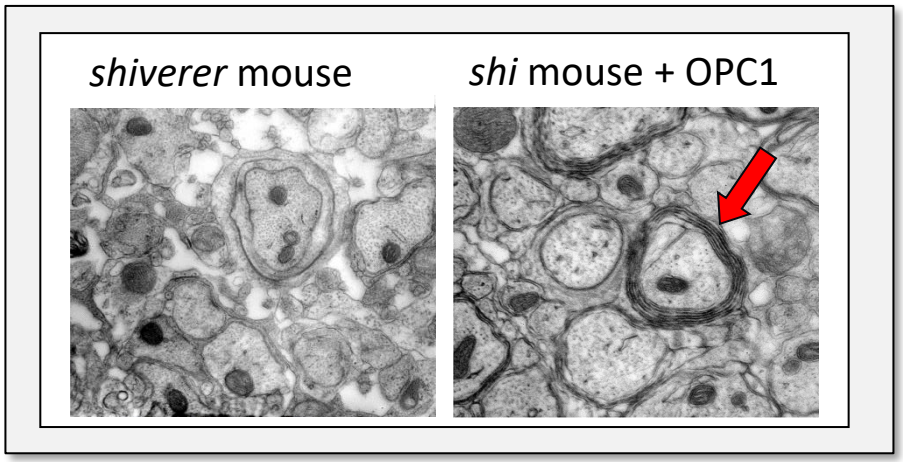
OPC1 Mechanisms of Action

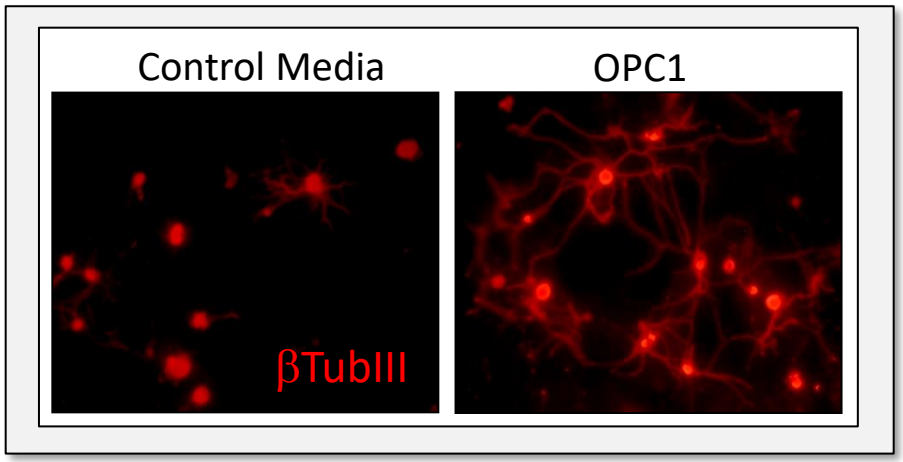
1. Prevention of Cavitation



2. Myelination of axons



3. Secretion of neurotrophic factors



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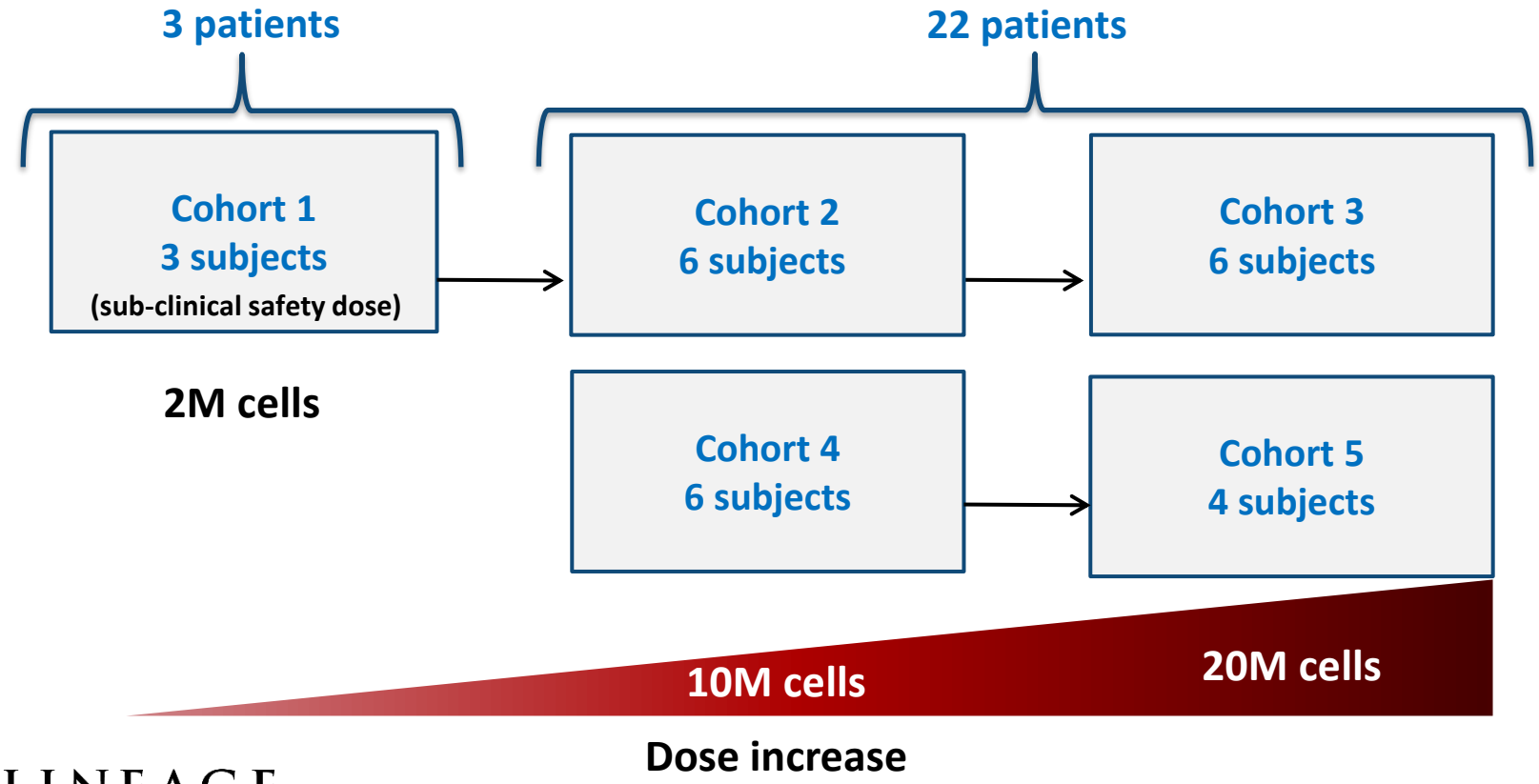
Clinical Trial Design (enrollment complete)

- **Open Label (n=25)**
- **Traumatic cervical SCI (C4-C7)**
- **AIS-A and AIS-B Enrolled**
- **Dosed 21-42 days post injury**

- **Primary Assessment: Safety**
- **Secondary Assessment: Neurological Function (ISNCSCI)**
- **Exploratory Functional Assessments: (SCIM, GRASSP)**



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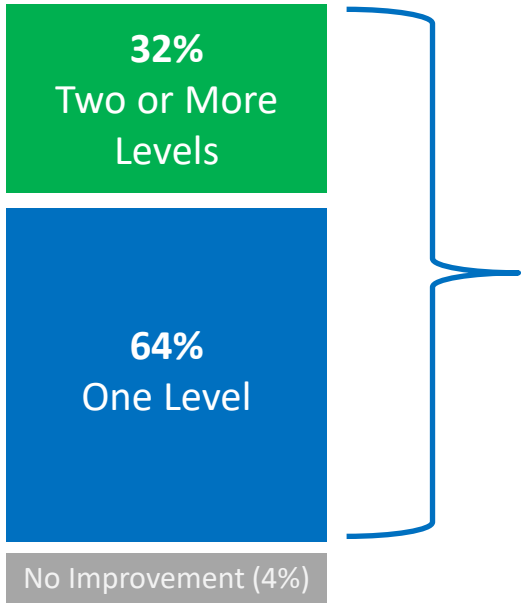
Clinical Trial Results - Safety and Efficacy in 22 Patients

Cell Engraftment
(at 12 months)

Motor Function Gain
(at 12 months)



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

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3 patients from Cohort 1 not included above because they received a sub-clinical "safety" dose of only 2M cells (the clinical dose is 10-20M cells)

Real-World Benefit from a 2 Motor Level Improvement

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

33% had +2 Level Improvement

Function	Cervical Injury Level				
	C1-C3	*C4*	*C5*	*C6*	*C7-C8*
Bowel					
Bladder					
Bed Mobility					
Transfers					
Pressure Relief					
Eating					
Dressing					
Grooming					
Bathing					
Wheelchair					
Car transport					
Daily Home Care	24 hr attendant	18-24 hr attendant	6-12 hr assistance	4 hr housework	1 hr housework

Total Assist **Partial Assist** **Independent**

Activities of Daily Living across different levels of motor function after cervical complete SCI Modified from Whiteneck et al. 1999)

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Clinical Trial – 2 Year Results (from Nov 2019 Update)

- **Promising overall safety profile (21 subjects evaluated)**
  - **No evidence of adverse changes via MRI**
  - **No unexpected serious adverse events related to the OPC1 cells**
  - **No study subjects had worsening of neurological function**

- **Motor Level Improvements Persist and Improve**
  - **Cohort 1 subjects continue to be stable 3-4 years after treatment**
  - **5 of 6 subjects in cohort 2 achieved at least 2 motor levels of improvement**
  - **1 subject in cohort 2 achieved 3 motor levels of improvement; maintained at 3 years**

- **Results support further evaluation in a randomized, controlled study**

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OPC1 Manufacturing Update (Dec 2020)

Announced major improvements to production and quality of OPC1

- **A new ready-to-inject formulation**
- **Elimination of dose preparation**
- **A 10- to 20-fold increase in production scale**
- **Improvements in functional activity**
- **12 new analytical and functional methods**
- **Elimination of all animal-based production reagents**
- **A significant reduction in product impurities (see next slide)**
- **New patent applications on the process and product; if allowed, expected expiration dates are 2039 and 2040**

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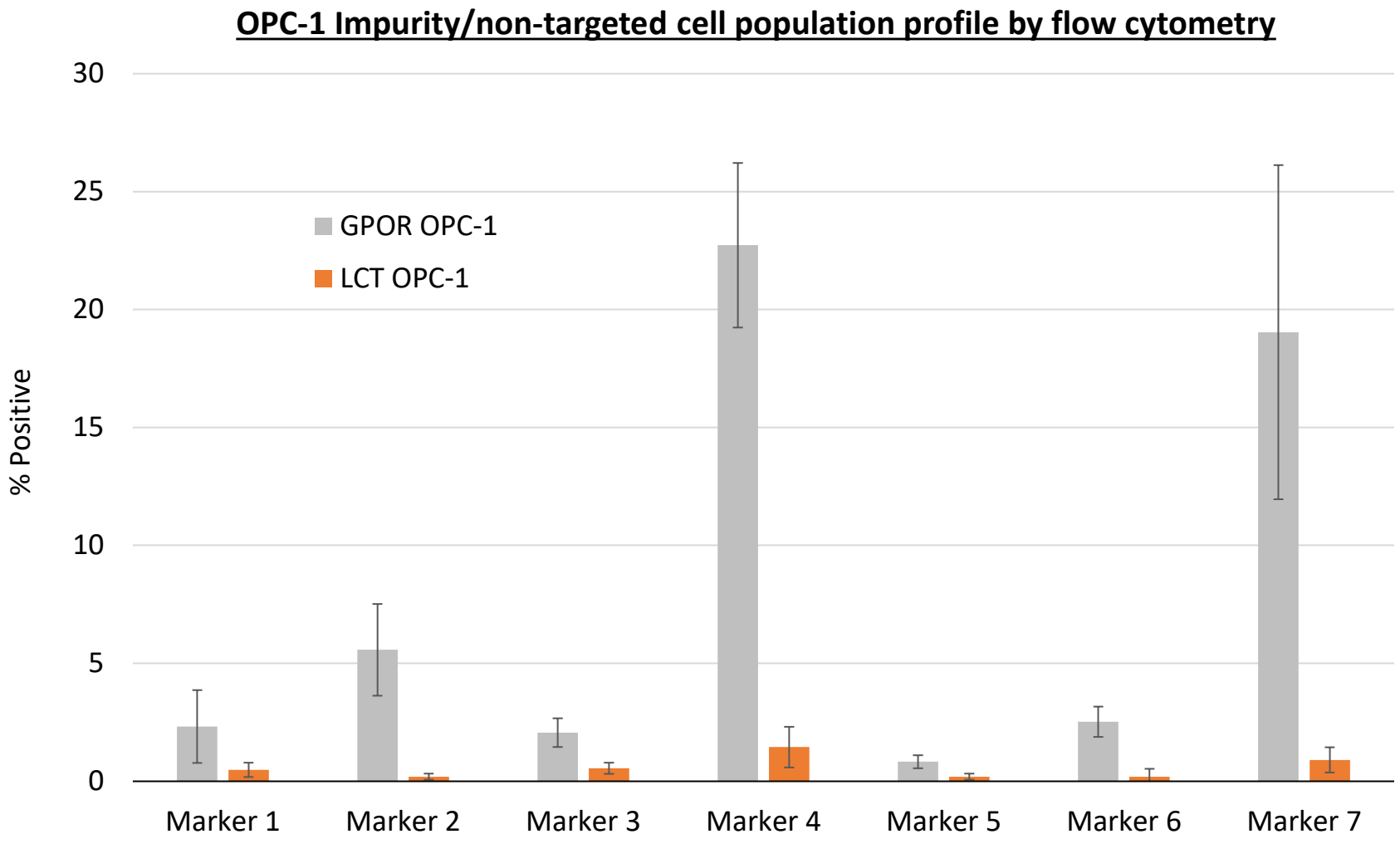
OPC1 Manufacturing Improvements: Lower Impurities



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OPC1 Program: Next Steps

Key Considerations:

- **Compelling clinical data supports later-stage comparative clinical trial**
- **Manufacturing deficiencies of prior sponsor have been addressed**
- **Delivery device enhancements can enable a greater number of sites**
- **Planning to meet with FDA to discuss manufacturing improvements and device evaluation**
- **Will begin considering regional and/or global partnership opportunities and external grant funding (CIRM and other organizations)**

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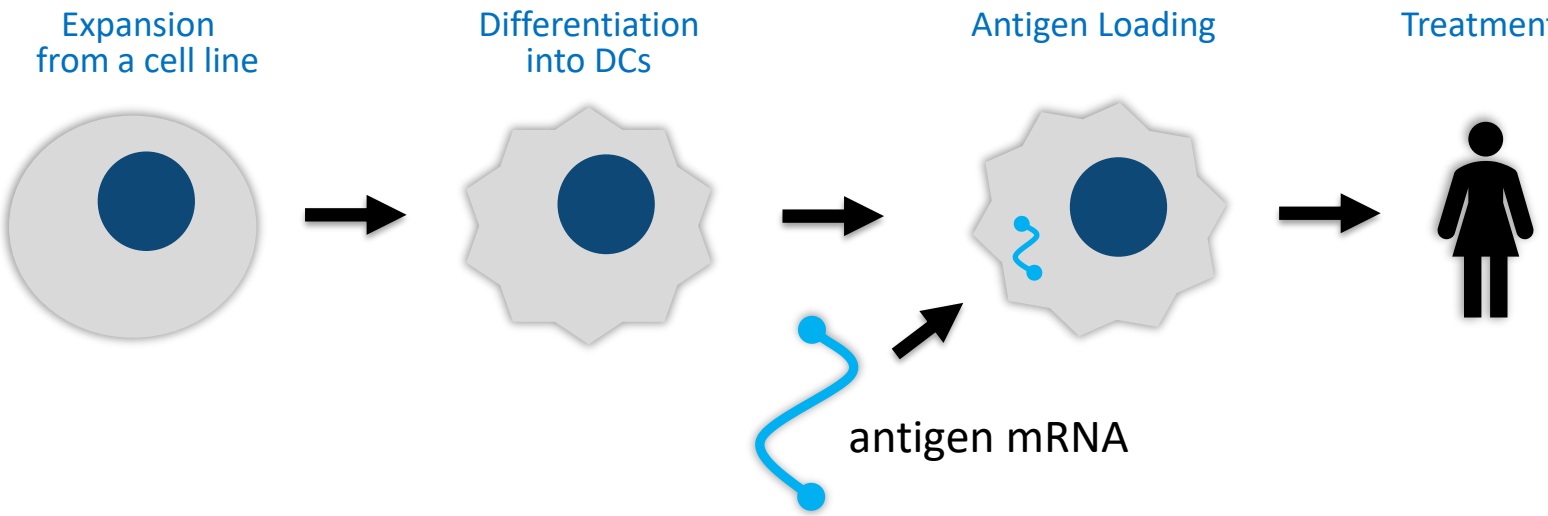
Immunotherapy is "poised to revolutionize treatment for all types of cancer"

Source: cancerresearch.org

VAC: A Cell Therapy Platform for Cancer and Infectious Diseases

The VAC Platform: Allogeneic Solutions for Autologous Problems

- **The VAC platform consists of large-scale "off the shelf" production of mature immune cells called dendritic cells (DCs)**
- **DCs are manufactured and loaded with either a tumor antigen (to treat cancer) or a viral antigen (as a vaccine for infectious diseases)**
- **Antigen presentation to the patient's T cells creates a *targeted* and robust immune response (up to 3%), aiding tumor cell destruction or viral clearance**



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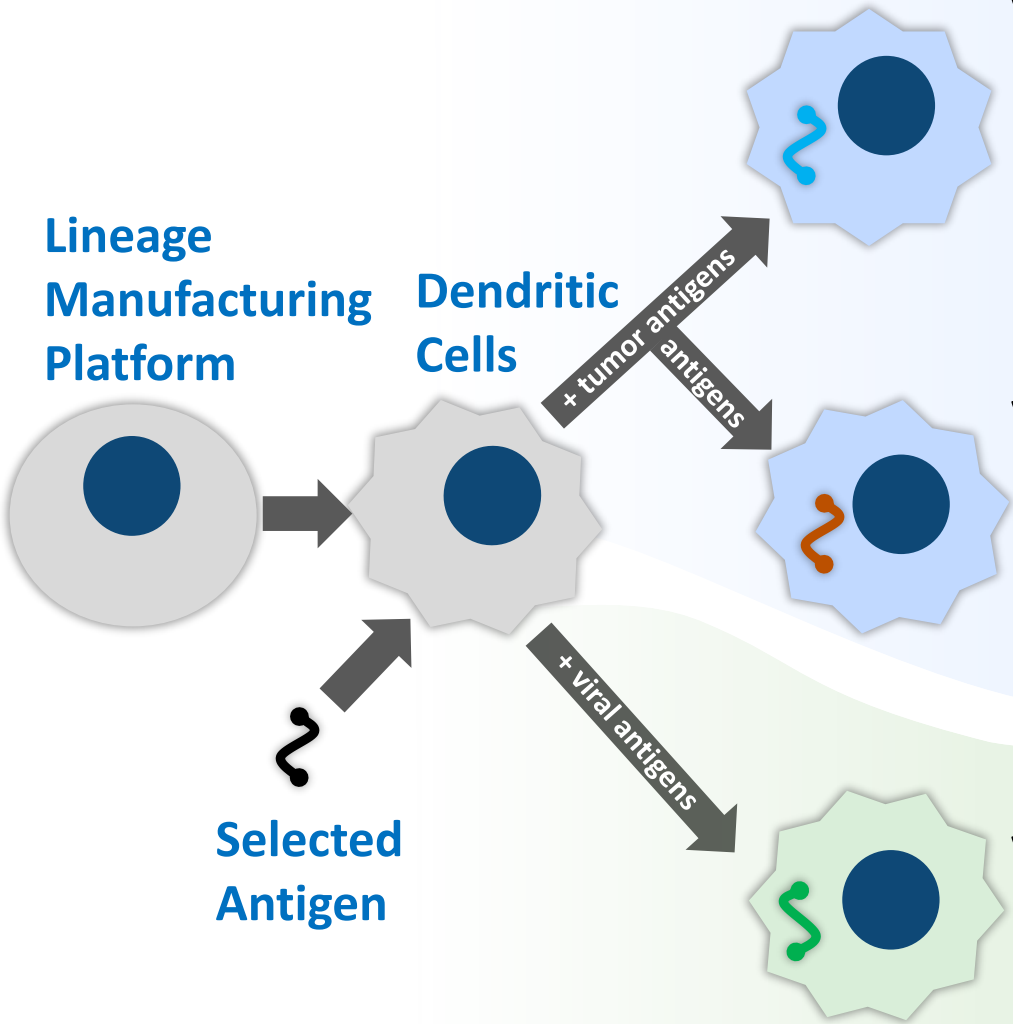
VAC Development – Many Programs from a Single Platform



VAC1 and VAC2 Highlights

- Positive phase 1 data in AML
- Positive ongoing phase 1 trial in lung cancer (NSCLC)
- Cancer Research UK alliance
- High T cell responses seen

VAC3, VAC4, VAC5…Opportunities

- Partnerships based on new products
- Retain highest value candidates
- Currently evaluating antigens

VAC-Infectious Diseases

- Designed to provide long-term protection via memory T cells
- Leverages VAC clinical data

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VAC Platform Next Steps

Upcoming Events and Key Considerations:

- **Complete dosing in ongoing clinical trial (2 patients remain)**
- **Evaluate options for VAC2 with a checkpoint inhibitor**
- **Design new products (i.e. VAC3, 4, 5, 6…) with newly discovered antigens**
- **Identify potential partnership and grant opportunities for more rapid expansion of the VAC platform**

Upcoming Milestones

PROGRAM	TIMING	INITIATIVES
OpRegen	Q1 2021	Present interim OpRegen data (3-month Cohort 4 update)
	Q2 2021	Present interim OpRegen data (6-month Cohort 4 update, ARVO)
	2H 2021	Planning discussions with the FDA on future clinical development
	Ongoing	Evaluate OpRegen partnership opportunities
OPC1	Q1 2021	Host Therapeutic Expert Call / R&D Day
	1H 2021	Complete process development to support late-stage clinical trial
	1H 2021	Meet with the FDA to discuss manufacturing improvements and device evaluation
	Ongoing	Evaluate delivery device options to access more clinical sites
	Ongoing	Consider regional and/or global partnership opportunities
VAC	Q1 2021	Complete dosing in ongoing clinical trial in NSCLC (n=8; 2 remain)
	Q3 2021	Report Phase 1 NSCLC data
	Ongoing	Evaluate new product candidates with additional tumor antigens/neoantigens

Our Goal is to Provide Life-Changing Cell Therapies to Patients

Lineage Cell Therapeutics: Bringing the Promises of Cell Therapy into Clinical Reality

3 clinical-stage programs with billion-dollar potential and partnership opportunities

World class in-house GMP manufacturing

One of the largest patent portfolios in cell therapy

Funded well into 2022 with cost-efficient business model

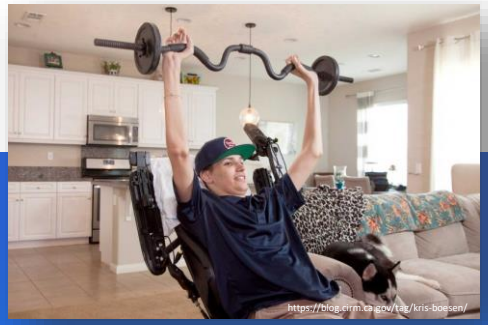
Leader in the emerging field of regenerative medicine

LINEAGE CELL THERAPEUTICS

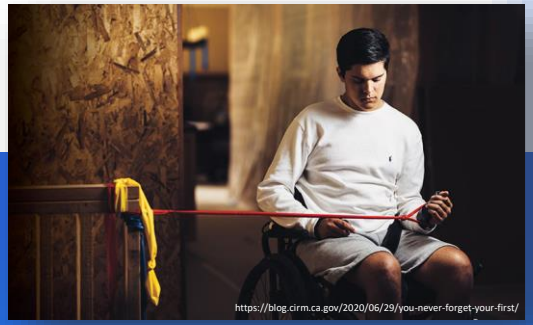
The Patients Are Our Inspiration.
View their stories at **lineagecell.com/media/#patients**

OPC1 SCiStar Study Participants

Lucas Lindner
"There's no reason to not look forward in the same way now that I had before all of this happened. I'm looking forward to driving again… it's a bright future."



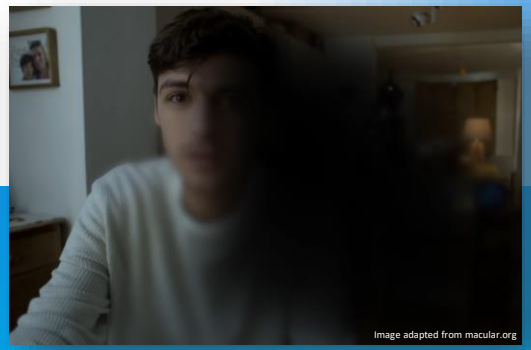
Kris Boesen
"I couldn't drink, couldn't feed myself, couldn't text or pretty much do anything, I was basically just existing. I wasn't living my life, I was existing."



Jake Javier
"Even though it's a completely different perspective, I can still lead that way. I can just try to be the best I can and to persevere the best I can."
Diablo Magazine, Feb. 16, 2017

The Millions Worldwide Suffering from Dry AMD Vision Loss

"Macular degeneration is a very frustrating condition which can greatly affect your day-to-day life."
- Macular Society



Courtesy of CIRM, American Macular Degeneration Foundation, and Macular Society