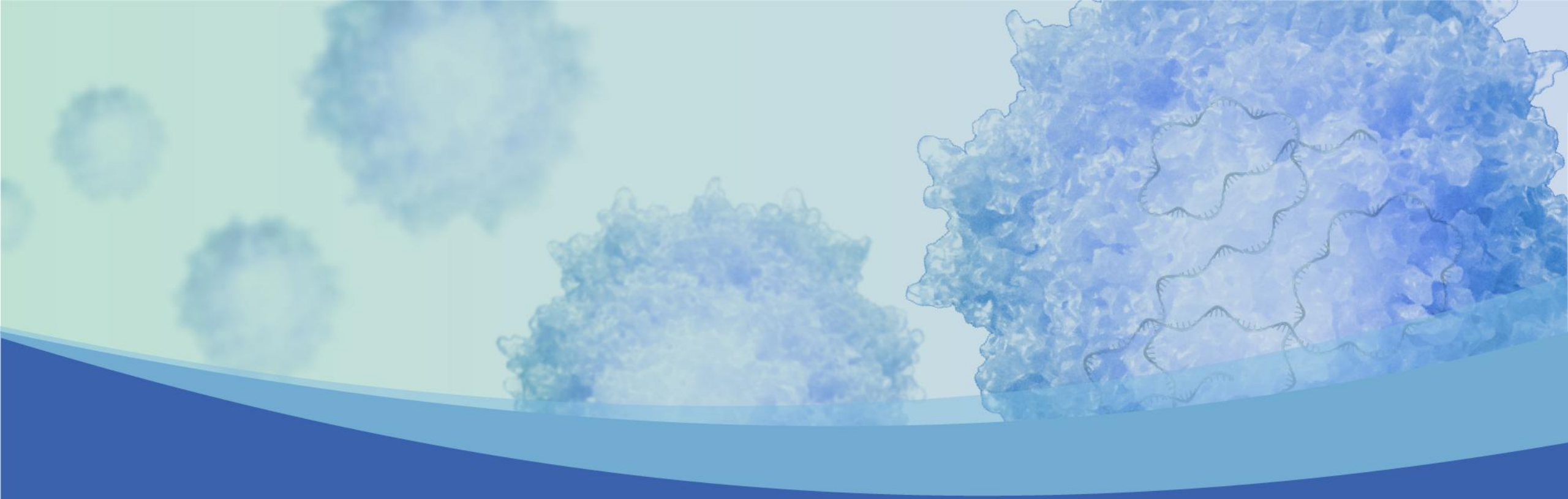


ocugen™

Courageous Innovation

Dedicated to Bringing Game-Changing Gene Therapies to Market and Working Even Harder to Provide Access to Patients Globally

October 2026

Forward Looking Statement

This presentation contains forward-looking statements within the meaning of The Private Securities Litigation Reform Act of 1995, including, but not limited to, strategy, business plans and objectives for Ocugen's clinical programs, plans and timelines for the preclinical and clinical development of Ocugen's product candidates, including the therapeutic potential, clinical benefits and potential safety thereof, expectations regarding timing, success and data announcements of current ongoing preclinical and clinical trials, the ability to initiate new clinical programs, statements regarding qualitative assessments of available data, potential benefits, expectations for ongoing clinical trials, anticipated regulatory filings and anticipated development timelines, which are subject to risks and uncertainties.

We may, in some cases, use terms such as "predicts," "believes," "potential," "proposed," "continue," "estimates," "anticipates," "expects," "plans," "intends," "may," "could," "might," "will," "should," or other words that convey uncertainty of future events or outcomes to identify these forward-looking statements. Such statements are subject to numerous important factors, risks, and uncertainties that may cause actual events or results to differ materially from our current expectations, including, but not limited to, the risks that preliminary, interim and top-line clinical trial results may not be indicative of, and may differ from, final clinical data; that unfavorable new clinical trial data may emerge in ongoing clinical trials or through further analyses of existing clinical trial data; that earlier non-clinical and clinical data and testing of may not be predictive of the results or success of later clinical trials; and that that clinical trial data are subject to differing interpretations and assessments, including by regulatory authorities.

These and other risks and uncertainties are more fully described in our filings with the Securities and Exchange Commission (SEC), including the risk factors described in the section entitled "Risk Factors" in the quarterly and annual reports that we file with the SEC. Any forward-looking statements that we make in this presentation speak only as of the date of this presentation.

Except as required by law, we assume no obligation to update forward-looking statements contained in this presentation whether as a result of new information, future events, or otherwise, after the date of this presentation.

Leader in Ophthalmology Gene Therapy

Pioneering biotechnology company leading the way to address major blindness diseases with novel modifier gene therapy



Targeting Three Biologics License Applications (BLAs) by 2028

Program		Phase I	Phase II	Phase III	Target BLA/ MAA* Submission
OCU400 Retinitis Pigmentosa 300,000 (U.S. + EU)	Gene-agnostic targeting >100 genes, broad indication **Designations:** RMAT[1], ODD[2], OMPD[3] & ATMP[4]			Phase 3 Enrollment Completed Phase 3 in Progress (Largest Orphan Gene Therapy Clinical Trial)	2Q 2027
OCU410ST Stargardt Disease 100,000 (U.S. + EU)	ABCA4-associated retinopathies caused by 1,200+ mutations **Designation:** ODD, RPDD[5] & OMPD			Phase 2/3 Enrollment Completed Phase 2/3 Pivotal Confirmatory Clinical Trial in Progress	Mid 2027
OCU410 Geographic Atrophy 2-3 million (U.S. + EU)	Advanced dry age-related macular degeneration (dAMD) **Designation:** RMAT, ATMP			Phase 3 initiated 3Q 2026 Phase 3 Pivotal Confirmatory Clinical Trial in Progress	2028

* Market Authorization Application will follow BLA submission

[1] Regenerative Medicine Advanced Therapy (RMAT); [2] Orphan Drug Designation (ODD); [3] Orphan Medicinal Product Designation (OMPD); [4] Advance Therapy Medicinal Products (ATMP); [5] Rare Paediatric Disease Designation (RPDD);

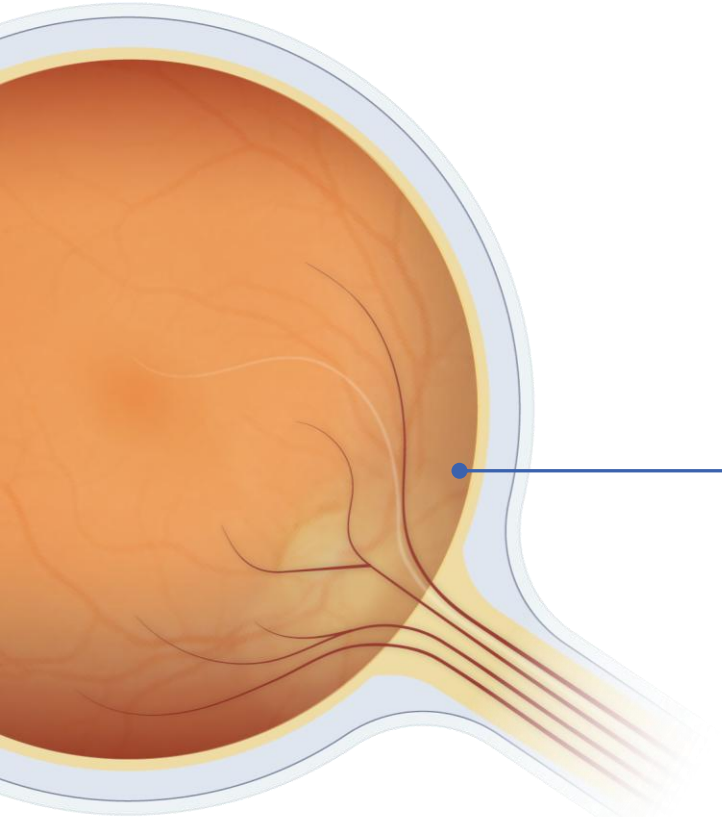
Modifier Gene Therapy Platform

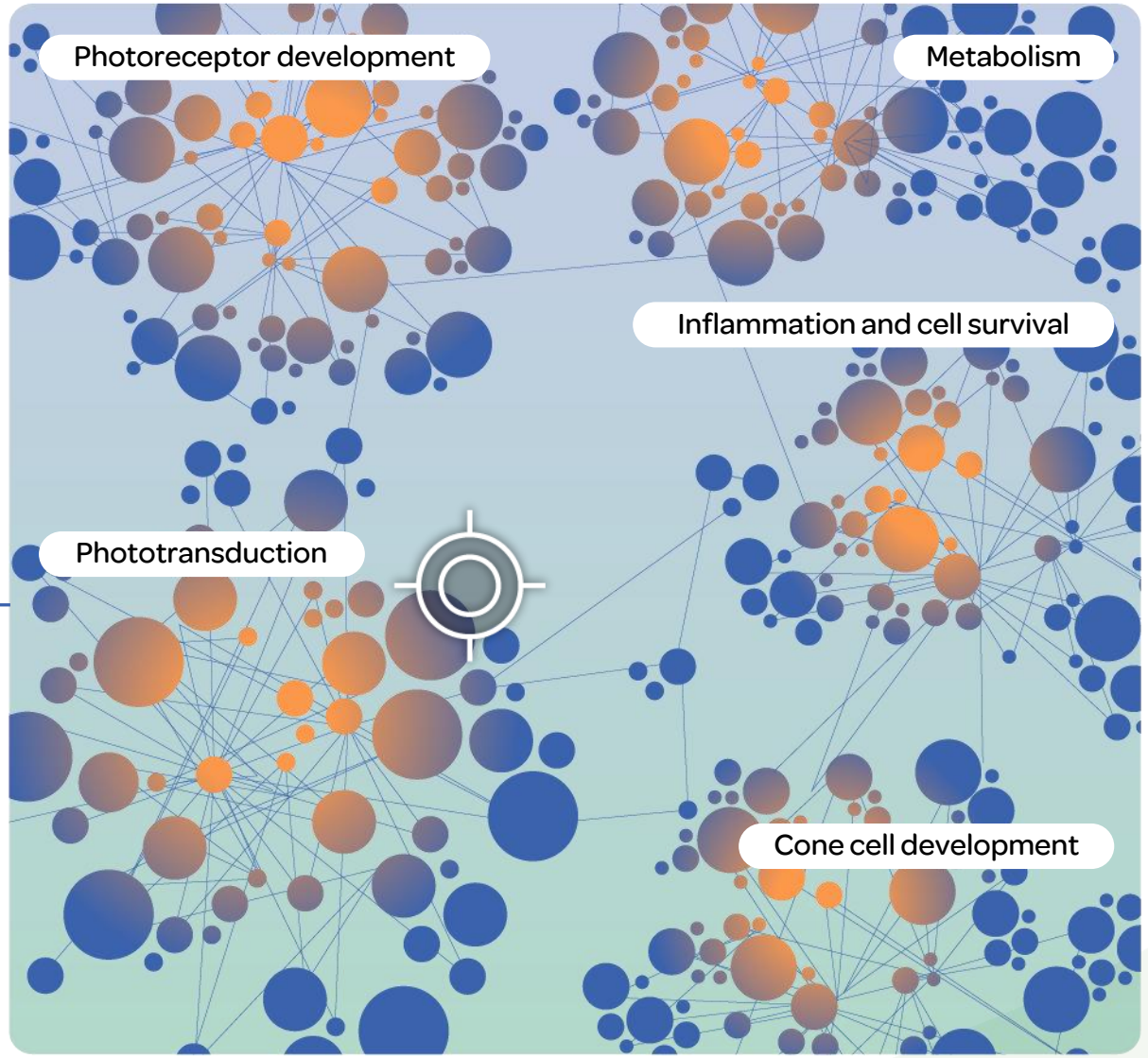
Breakthrough technology designed to address many rare diseases as well as complex diseases that affect millions

Problem

Traditional therapy has limited therapeutic potential

Traditional therapy can only target one single gene at a time, limiting therapeutic potential.





65%

of all human proteins are expressed in the retina

785

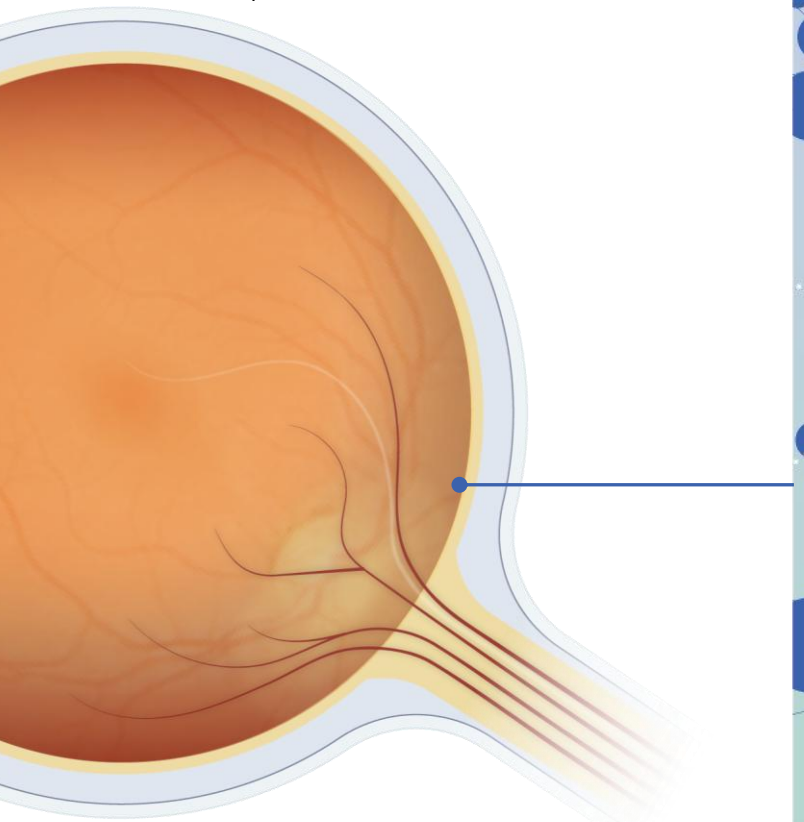
genes are highly specialized to it, interacting through complex pathways

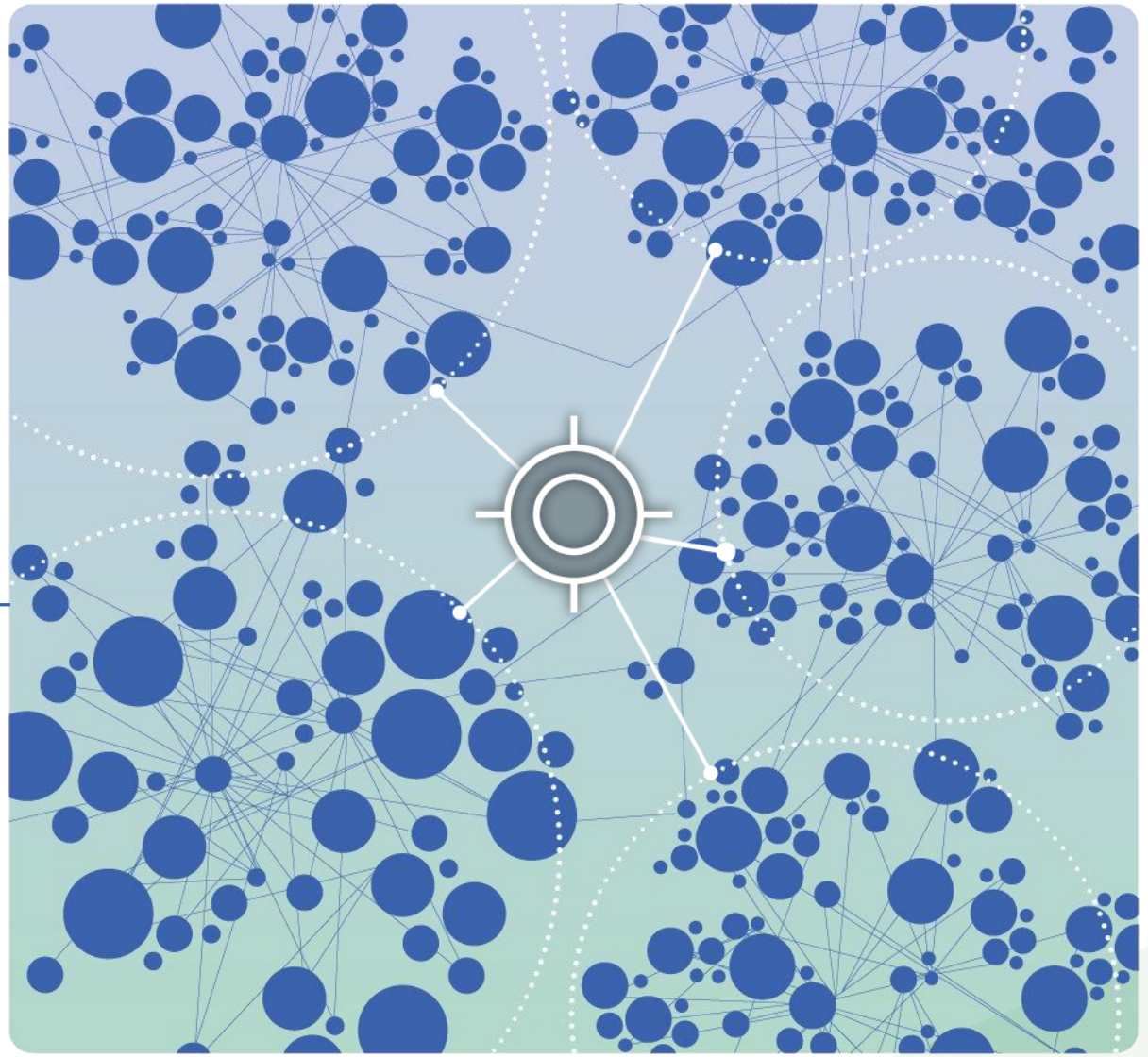
250+

mutations affecting the retina have already been identified

The Solution is a Gene-Agnostic Approach

Our breakthrough technology is designed to address rare diseases and complex diseases





Targeting master regulators

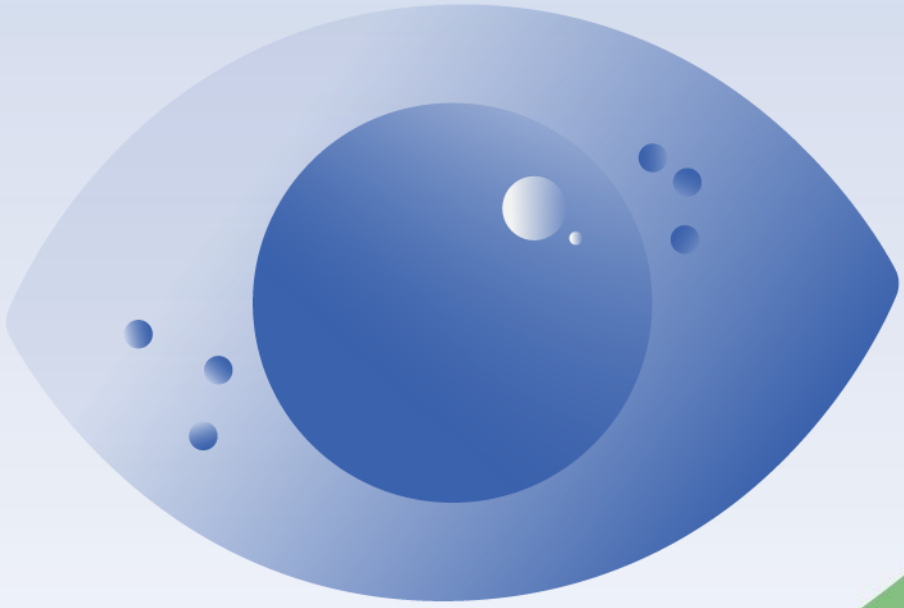
Master regulators control entire gene networks. By targeting them, Ocugen's gene therapy platform addresses the root cause of IRDs and multifactorial diseases (e.g. dAMD).

- Gene-Agnostic
- Multifactorial
- Durable Effect
- Broad Impact

OCU400

Retinitis Pigmentosa (RP)

Broad indication, gene-agnostic, targets 100+ genes



OCU400

First-in-Class Gene Therapy for Retinitis Pigmentosa

Retinitis Pigmentosa

Retinitis Pigmentosa (RP) is a group of rare, inherited retinal diseases caused by mutations in over 100 genes, leading to progressive vision loss and, in many cases, blindness.

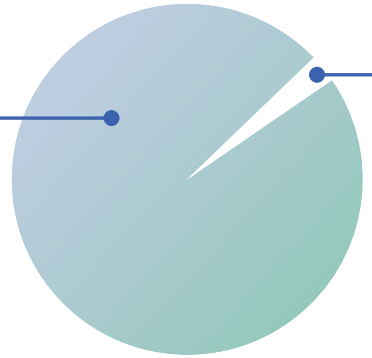
1.6 million
globally suffer from RP

1
approved treatment available

Market Potential

U.S. + EU

298,000
Patients going untreated

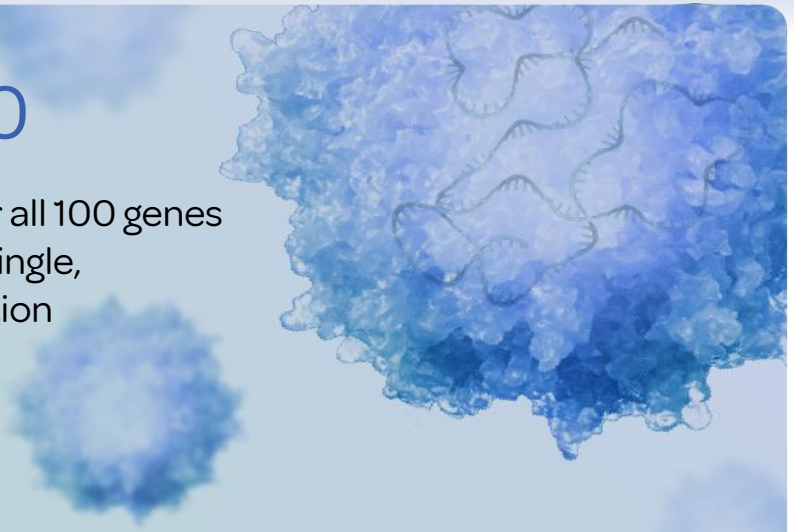


2,000
Luxturna® only addresses one gene (RPE65)

$52M peak annual sales

OCU400

One product for all 100 genes delivered via a single, subretinal injection



Regulatory Milestones

(Anticipated)

- **2026**
  Phase 3 trial underway – largest orphan gene therapy trial for RP
- Enrollment completed; Manufacturing process validation completed; Launch supplies ready
- **2027**
  Topline Clinical Readout followed by U.S. (BLA) and EU (MAA)

Designations

- FDA (RMAT + ODD)
- EMA (ATMP+ OMPD)

Regenerative Medicine Advanced Therapy (RMAT); Orphan Drug Designation (ODD); Orphan Medicinal Product Designation (OMPD); EAP= Expanded Access Program

The largest orphan gene therapy trial ever run, targeting approval across all RP mutations

140

patients enrolled in
Phase 3 liMeliGhT trial
(largest orphan gene therapy Ph3)

100+

RP-causing genes
addressed by a single
subretinal injection

1H 2027

topline data expected: 1Q
BLA filing target: 2Q

POPULATION

Clinical trial eligibility criteria includes early- to late-stage RP, spanning pediatric to adult populations

PRIMARY ENDPOINT

12-month change in visual function via LDNA Lux Level

RANDOMIZATION

2:1 — treatment vs. untreated control

EU BLA PATHWAY

Single U.S. trial accepted by EMA for MAA

GLOBAL VALIDATION SIGNAL

Kwangdong OCU400 deal — Potential sales milestones of up to $180M+ and royalties equaling 25% of net sales
Roots Pharmaceutical OCU400 deal – Potential sales milestones up to $255 million and royalties equaling 22% of net sales

Trial Design:
Enrolling patients across multiple mutations, spanning pediatric to adult populations and early- to late-stage disease. No competitor has pursued this breadth within a single trial.

Phase 1/2 Subject Disposition: Safety and Post-hoc Efficacy Analysis

18
Safety analysis
All Phase 1/2 subjects

−2 →

16
Post-hoc efficacy
9 RHO
3 AD-NR2E3
4 AR-NR2E3

−3 →

13
Post-hoc efficacy
9 RHO
4 AR-NR2E3

−6 →

7
Phase 3 ITT*
Post hoc efficacy
5 RHO
2 AR-NR2E3

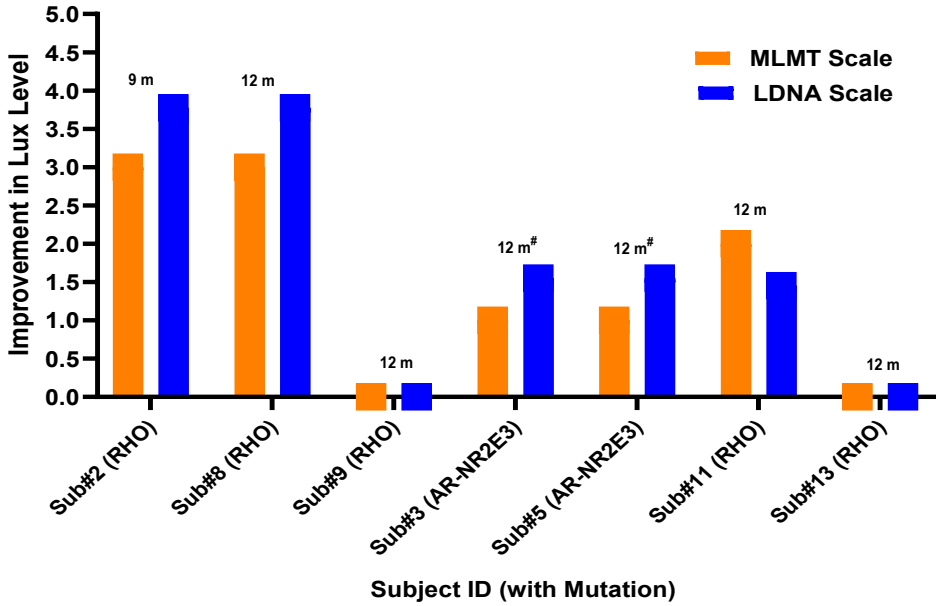
18 → 16
2 with surgery-related AEs
Sub#6, Sub#14
Safety analysis only

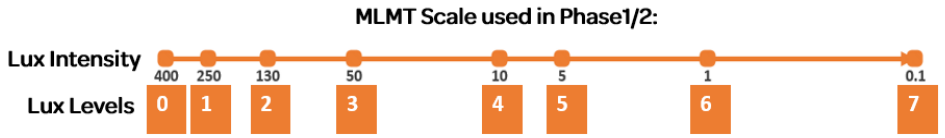
16 → 13
3 AD-NR2E3 subjects
Not included in the efficacy analysis due to a dominant negative effect

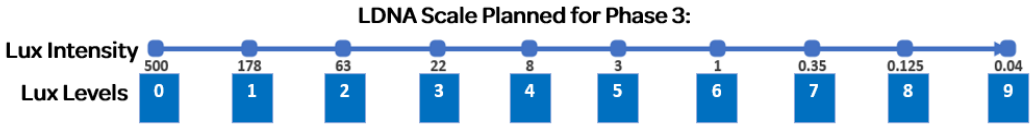
13 → 7
6 excluded post-hoc
1 sentinel, poor visual acuity: Sub#1
5 subjects ceiling effect at baseline: Sub#7, Sub#10, Sub#12, Sub#15, Sub#18

*Post-hoc analysis: Patients who qualify for Phase 3 Intent-to-Treat (ITT) criteria: RHO + AR-NR2E3 subjects, excluding adverse event, sentinel and ceiling effect subjects.
Ceiling effect on Mobility Test: Baseline performance at 1 Lux - Subjects already achieved the lowest illumination level measurable by the mobility test
AD, autosomal dominant; AR, autosomal recessive; ITT, intent to treat; MLMT, multi-luminance mobility test; Sub#= Subject number

Phase 1/2 Population Meeting "Intent to Treat Population" Criteria for Phase 3* at 12M





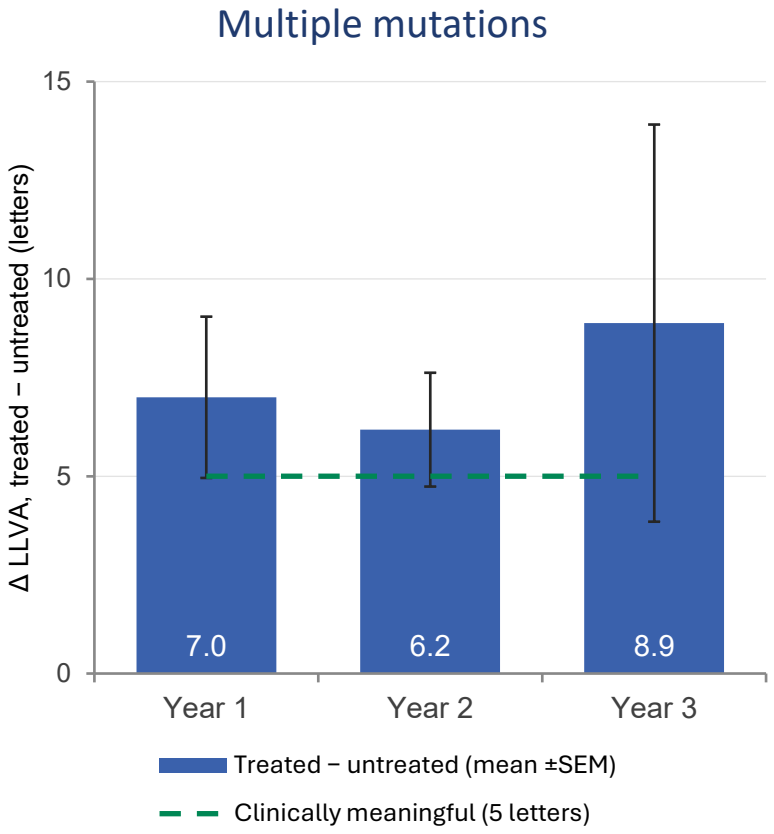


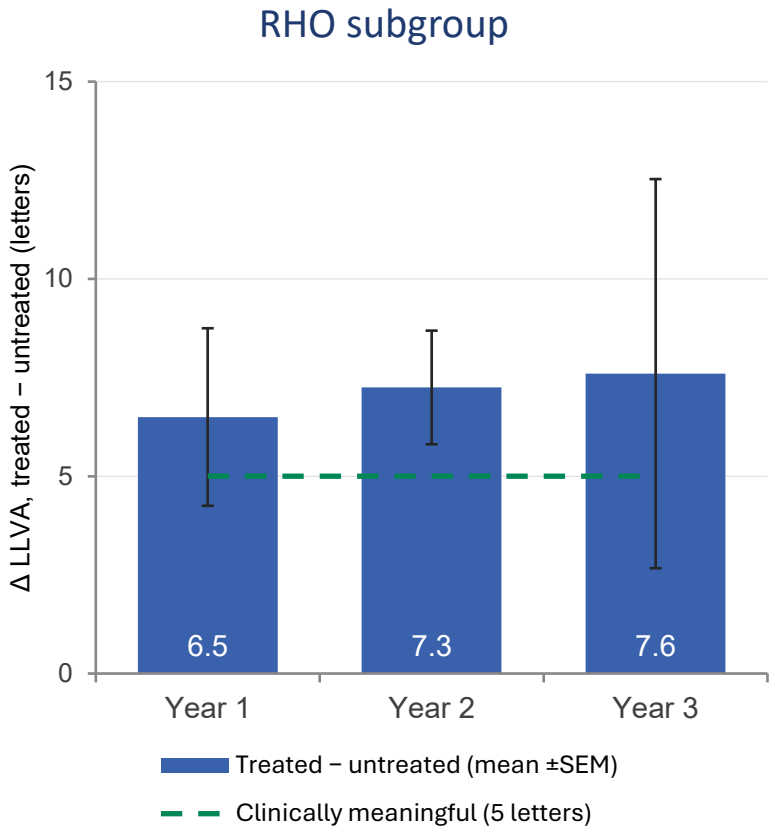
- Phase 3 primary endpoint revised: LDNA replaces Multi-Luminance Mobility Test (MLMT) mobility test
- Wider range, finer resolution: 0.4–500 lux across 10 levels vs 1–400 lux across 6 levels for MLMT
- Evenly spaced log-unit steps between lux levels and lux intensity
- Addresses the ceiling effect seen in Phase 1/2
- Clinical success: ≥2 lux level improvement from baseline at Week 52
- **Why LDNA?**
  - Measures functional vision
  - Regulatory precedent: ≥2 lux level MLMT improvement (Luxturna®)
  - Correlates with visual function (e.g., LLVA) and quality of life

71.4% (5/7) of treated eyes are projected to meet ≥2 Lux level improvement on LDNA scale

**RHO +AR-NR2E3* Subjects (- Adverse Events, Sentinel); and Ceiling Effect (RHO+AR-NR2E3) Subjects, Sub#= Subject numbers
 # AR-NR2E3 Subjects: Baseline MLMT at 5 Lux level; 1 Lux level improvement resulted in ceiling effect on old scale on 0-6 Lux levels

Durable LLVA Treatment Effect Through 3 Years





88%

of evaluable treated subjects showed improvement or preservation of LLVA vs untreated eyes at Year 3 (7/8)

0

SAEs related to OCU400 through 3 years

Benefit in RHO subjects supports a gene-agnostic mechanism of action

Evaluable, consented subjects (multiple mutations): Year 1: N = 11, Year 2: N = 11, Year 3: N = 8. Preservation = ±4 letters; improvement = ≥5 letters from baseline.
Evaluable, consented subjects for RHO mutations at Year 1 (N=10), Year 2 (N=8), Year 3 (N=5). Year 3 values are LogMAR-derived ETDRS letter equivalents. Error bars = SEM.

Phase 3 Study: >99% power as per current enrollment and effect size assumption

Treatment vs. Control Responder Proportions

Comparative power analysis across primary endpoint response scenarios

Scenario	Treatment Group (Responder %)	Control Group (Responder %)	Treatment Effect (Delta)	Statistical Power
Scenario 1	50.0% (0.50)	10.0% (0.10)	**+40.0%**	**99.8%**
Scenario 2	20.0% (0.20)	1.0% (0.01)	**+19.0%**	**93.2%**

>93% power is **maintained @ 20% responder** rate in treatment vs 1% in control

Statistical Method

- Power calculated using SAS PROC POWER.
- One-sided Fisher's Exact Test.
- Significance level (α): 0.025.
- Binary responder endpoint.

Study Design

- Total sample size: N = 140 subjects.(TRT-92, CTRL-48)
- Randomization ratio: 2:1 (Treatment : Control).
- Power estimated for each treatment-control responder rate combination.

Conclusions

Mechanism	Benefit in RHO subjects supports the gene-agnostic modifier mechanism; evaluation continues in the Phase 3 liMeLiGhT trial.
Safety	OCU400 was generally safe and well tolerated across doses and mutations through 3 years, with no SAEs related to OCU400; visual acuity SAEs were attributed to surgery (foveal detachment).
Month 12 (N = 18)	89% (16/18) of subjects showed preservation or improvement in the treated eye on BCVA, LLVA, or MLMT; LLVA and MLMT were stable or improved in 81% (13/16) of treated eyes.
Year 3 (N = 8)	Durable LLVA treatment effect (mean +8.9 letters vs untreated eyes); 88% of evaluable subjects improved or preserved.

EAP Program in the Bahamas marks first OCU400 approval

Highlights:

- Bahamas Regulatory Agency, (LARTA[1]), provided provisional approval and priority designation of OCU400
- Full LARTA approval, focused on logistics – site readiness and activation, and patient dosing expected within 90 days under a regulated EAP[2]
- The EAP is open to patients around the world at commercial pricing
- First approval of OCU400 for a broad RP indication: early-to late-stage disease and pediatric to adult patient population
- Enables global patient access for those with high unmet medical needs ahead of full product approval in major markets, offering an important treatment option for patients at risk of serious vision loss and blindness
- Ocugen to generate revenue from EAP – potentially $1-2M per patient[3]

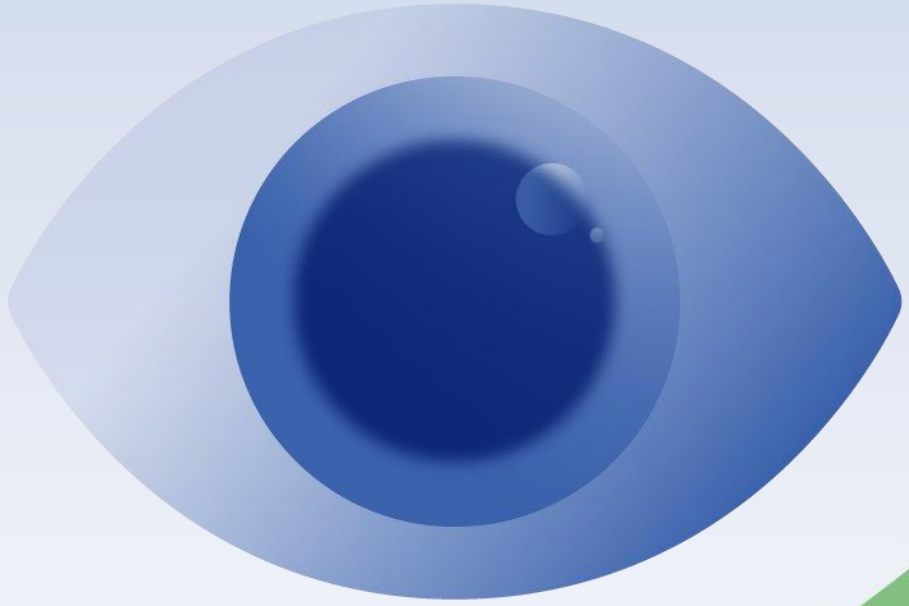


[1]: LARTA – Bahamas Regulatory Agency (Longevity and Regenerative Therapies Board)
[2]: Early Access Program
[3]: Retina "Modeling Natural History and Cost-Effectiveness of Gene-Agnostic Treatment in Retinitis Pigmentosa" (link here)

OCU410ST

Stargardt Disease

ABCA4 -associated retinopathies >1,200 mutations



OCU410ST

First-in-Class Gene Therapy for Stargardt Disease

Stargardt Disease

A rare IRD associated with 1,200+ mutations of the *ABCA4* gene

1 million
globally suffer from *ABCA4*-associated retinopathies

0
approved treatments available

Market Potential

U.S. + EU

100,000
Potential Patients

100%
of Patients going untreated

OCU410ST

for upregulation of networks of key genes improving the cell environment and survival with a single, subretinal injection

Regulatory Milestones

(Completed/anticipated)

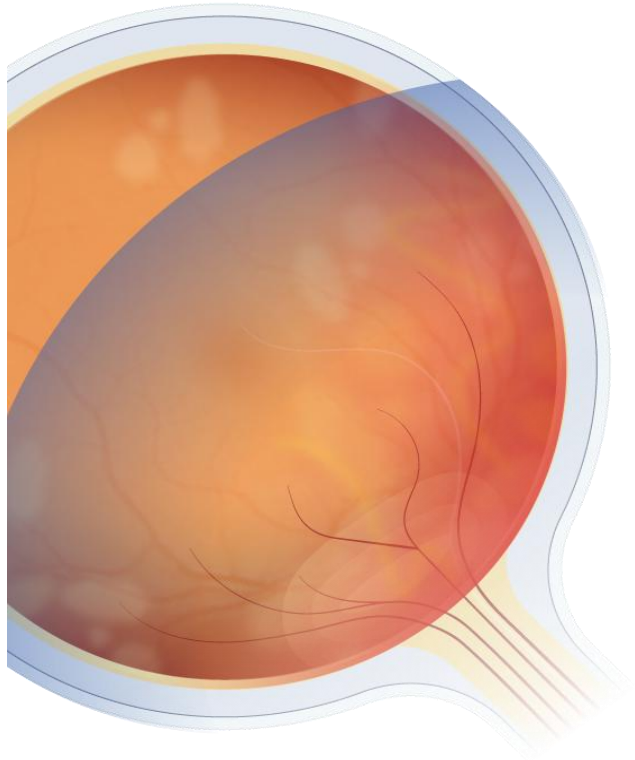
- **2025**
  Initiated pivotal Phase 2/3
- **2026**
  Enrollment completed
  †
- **2027**
  Topline Data;
  BLA submission

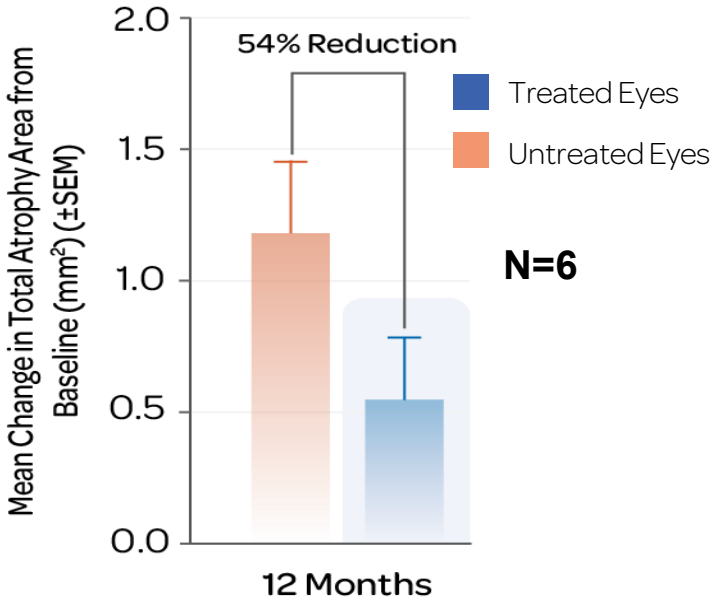
Designations

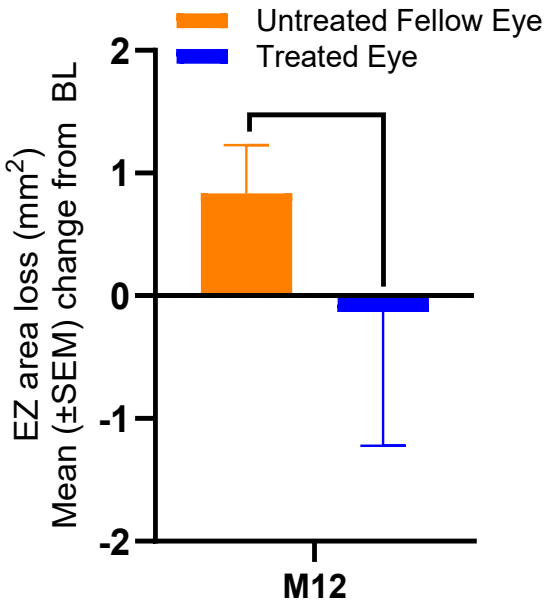
- FDA
  (RPDD + ODD)
- EMA
  (ATMP + OMPD)

† After completing a pre-specified interim analysis of atrophic lesion size in the Phase 2/3 clinical trial of OCU410ST in Stargardt disease, the independent Data Monitoring Committee (DMC) recommended continuing the study according to the protocol except with a modification to obtain 8 months of follow-up on lesion size in the entire study population.

Phase 1 GARDian1 Trial Demonstrated Clinically Meaningful Benefit







Lesion Size Reduction

54%

treated vs. Control

EZ Preservation

116%

Treated vs. Control

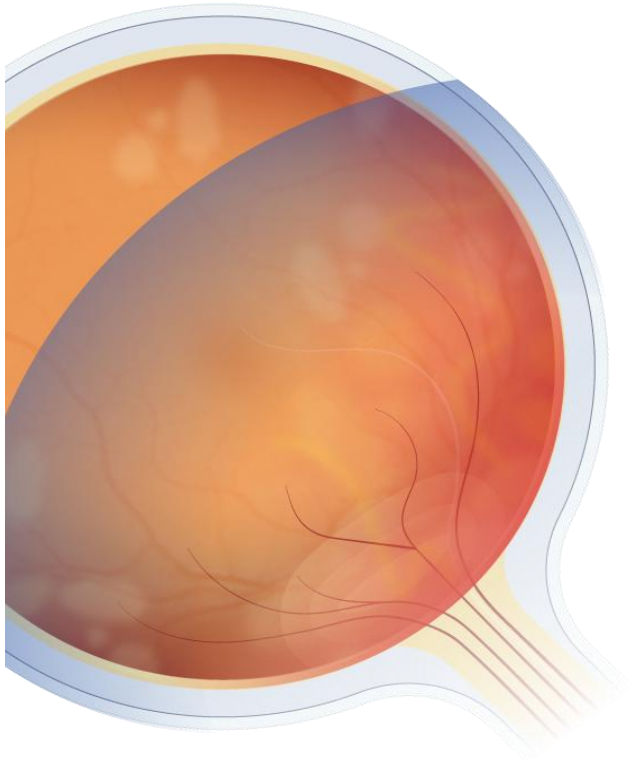
Improvement or Preservation in evaluable Treated Eyes

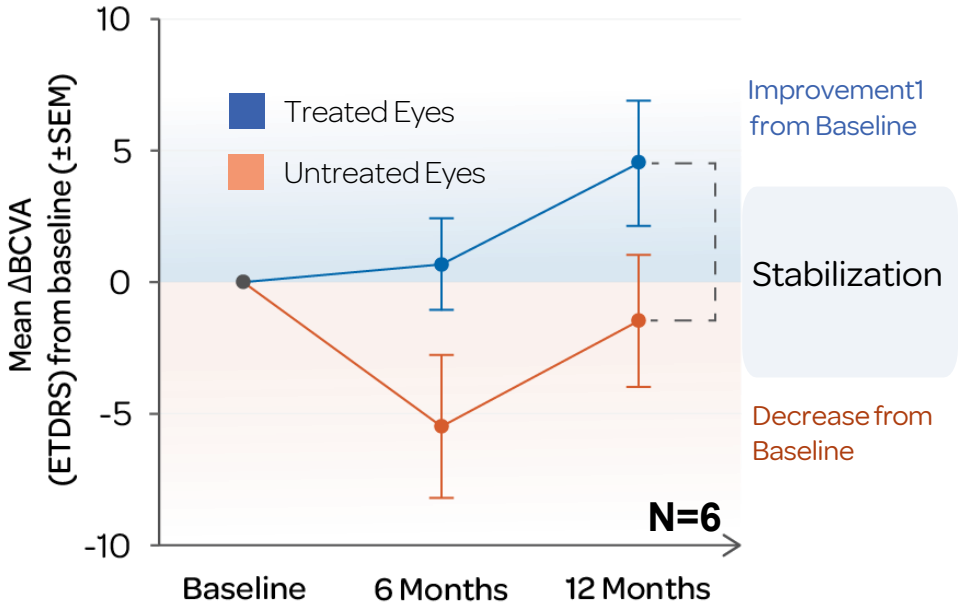
Preservation = -/+4 letters from Baseline, Improvement: ≥5 Letters from Baseline

No Serious Adverse Events Reported

*Khanani *et al.*, Nature Eye, January 10, 2026 (https://doi.org/10.1038/s41433-025-04202-5)

Phase 1 GARDian1 Trial Demonstrated Clinically Meaningful Benefit





Nearly

1-line gain

In visual acuity compared to untreated eyes

Visual Function*

100%

Stabilized or Improved

compared to untreated eyes

*Khanani *et al.*, Nature Eye, January 10, 2026 (https://doi.org/10.1038/s41433-025-04202-5)

Improvement: ≥ 5 ETDRS letters; Stabilization : ±4 ETDRS letters
Data points for M6 (N=6); M12 (N=6); *Nearly 6 Letters (Early Treatment Diabetic Retinopathy scale)
Two patients with worsening cataract (1 Low, 1 Med), 1 High dose patient with loss-to-follow up were not included in the analysis

GARDian3- Phase 2/3 Pivotal Confirmatory Trial

Trial Design

MTD
Established in Phase 1

Randomized 2:1 (N=51)

17
Control Group
No Treatment

34
Treatment Group
3×10^{10} vg per eye in 200 µL

DSMB
4-week Data Reviews

First	Second	All
17	17	Subjects

Endpoints

Target Population

Early- to late-stage disease population
Including pediatrics (3+ years)

Primary

12-month change in atrophic lesion size from baseline vs. control

Measured in mm² by fundus autofluorescence (FAF)

Secondary

Functional improvement in vision vs. control eye

Assessed by LLVA and BCVA

EZ analysis (exploratory)

OCU410

Geographic Atrophy

Advanced dry age-related macular degeneration (dAMD)

First-in-Class Gene Therapy for GA Patients

Geographic Atrophy

Geographic Atrophy (GA) is an advanced form of dry AMD. GA causes irreversible degeneration of retina cells in the macula, leading to loss of central vision.

~8 million

globally suffer from advanced dAMD

2

approved treatments available that address only 1 of the 4 pathways involved in disease progression

Market Size

U.S. + EU

2-3M

Patients

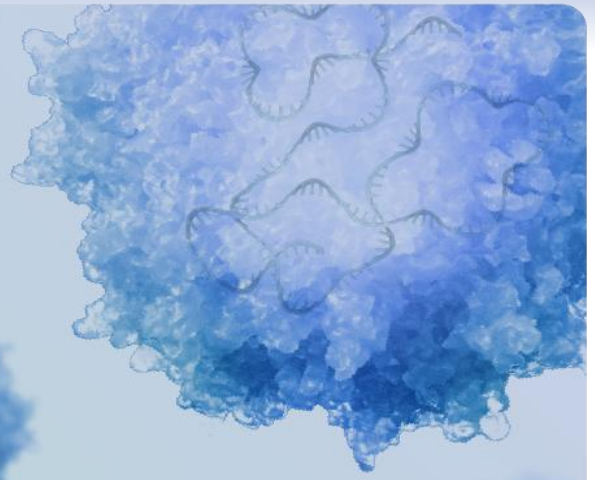
Approved Products in US

SYFOVRE® and IZERVAY®

>$1B combined annual sales

OCU410

Designed to address all four pathways associated with GA without 6-12 injections per year and related side effects



Regulatory Milestones

(Anticipated)

- **2026** Phase 2 topline data released
- **3Q 2026** Initiated Phase 3
- **2027** Complete enrollment
- **2028** Phase 3 topline data; BLA submission

Designations

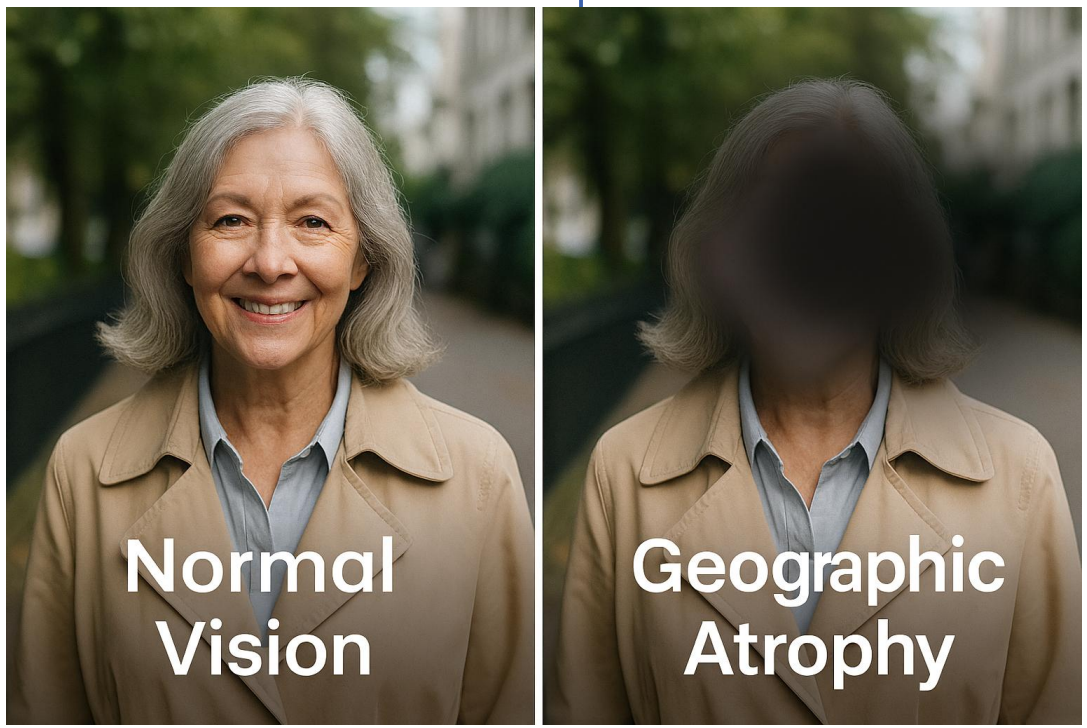
- EMA (ATMP)
- FDA (RMAT)

Recent Milestone

Positive 12-month Phase 2 data; first patient dosed in Phase 3

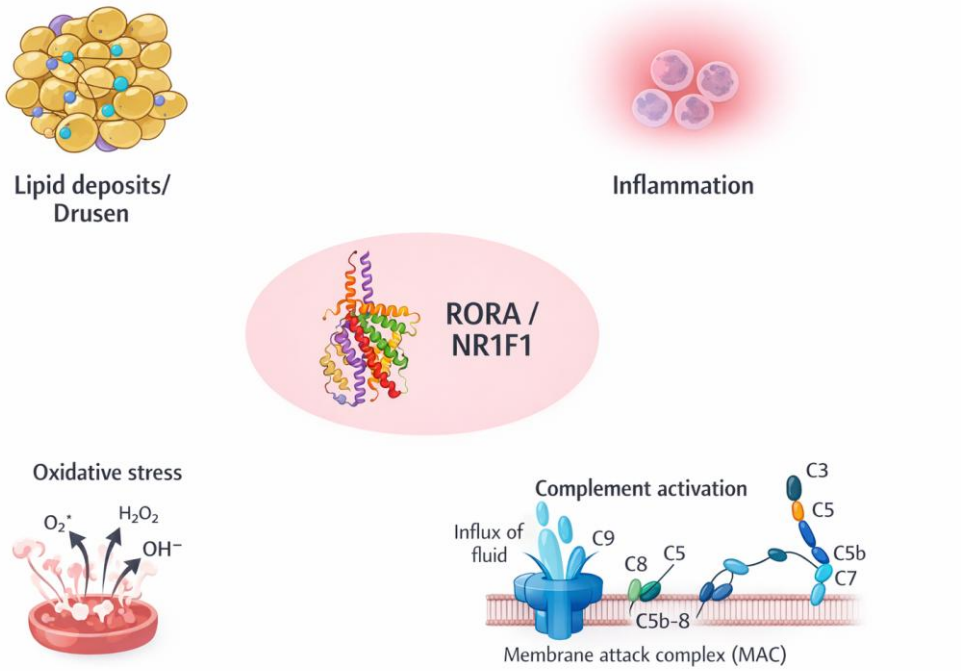
OCU410 Aims to Disrupt GA Treatment Driven by a Novel MOA

GA Patient Experience



Driving global change at the patient level
(2-3M patients in U.S. and EU)

RORA 4-way MOA[1]



Addresses all disease pathways – marketed therapies only address the complement system

[1]Akula et al. *Gene Ther* 2024; MOA= Mechanism of Action: anti-drusen activity (improves retinal function), anti-inflammatory (suppresses inflammation in HMC3 cells), anti-oxidative (improves ARPE19 cell survival), anti-complement (increases Cd59 protein)

Phase 2 ArMaDa Trial: To Assess Safety and Efficacy of OCU410 in GA

Target Population: **Geographic atrophy secondary to dAMD**

Randomization

1:1:1

17	17	17
Medium Dose	**High Dose**	**Control Group**
1x 10^{10} vg per eye, 200 µL	3x 10^{10} vg per eye, 200 µL	No Treatment

Endpoints

Primary: Change in **GA lesion** size measured in mm^2 by FAF at Month 12

Exploratory: EZ preservation (correlates to visual function)

Key Protocol Inclusion Criteria:

- Subjects 50 years and older
- BCVA of ≥21 ETDRS Letters
- Total GA area ≥2.0 and ≤ 20.5 mm2 (1 to 8 disk areas)
- GA within foveal and nonfoveal region
- CNV in fellow eye is not exclusionary
- Subjects who had a history of pegcetacoplan or avacincaptad pegol use were enrolled with 3M washout period

Phase 2 (ArMaDa Trial): NCT06018558

OCU410 Demonstrates Favorable Safety and Tolerability Profile

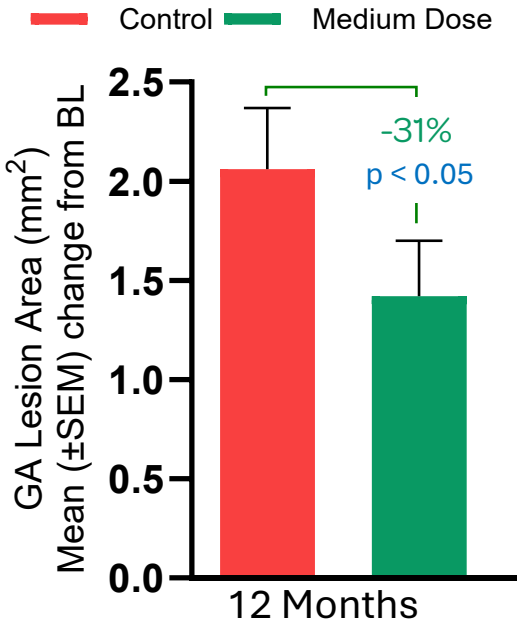
Adverse Events (AE), Serious AEs, Adverse Events of Special Interest (AESI)	Control (N=13)	OCU410 Med Dose (N=16)	OCU410 High Dose (N=16)
Endophthalmitis and Retinal Detachments	0	0	0
Retinal Vasculitis and/or Retinal Vascular Occlusion	0	0	0
Choroidal Neovascularization (CNV)	1*	2*	1*
Intraocular Inflammation	0	0	1#
Ischemic Optic Neuropathy	0	0	0
Treatment Emergent Serious Adverse Events	0	0	0
Treatment Emergent Adverse Events Considered Severe	0	0	0

No OCU410-related SAEs and AESIs reported to date

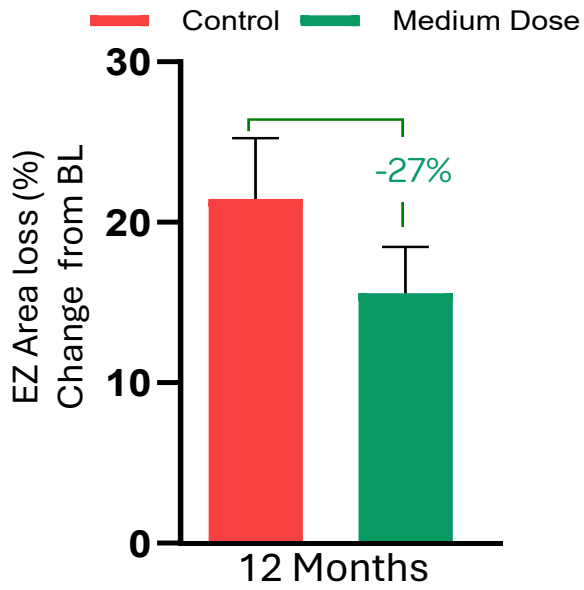
Intraocular Inflammation deemed related to study procedure – resolved
*CNV reported as AEs were not related to OCU410 based on DSMB review

Phase 2 Data Driving Optimal Dose for Phase 3

Change in GA Lesion Area (FAF; N=28)



Ellipsoid Zone Loss (SD-OCT; N=25) (Correlates to Visual Function)



No disease progression in~20% of treated subjects

75% of treated subjects showed >30% reduction in lesion growth

Lesion Size Reduction

31%

treated vs control

EZ Preservation

27%

treated vs control

References for Natural History: Mones and Biarnes, 2018, TVST, N=117;
For Primary Endpoint analysis evaluable subjects include controls (N=12) and medium dose (N=16); for EZ loss analysis, Controls (N=12) and medium dose (N=13)
GA Lesion ≥2.5 mm^2 and ≤17.5mm^2 (Lesion criteria in prior pivotal trials supporting approval); FAF= Fundus Autofluorescence; SD-OCT= Spectral Domain Optical Coherence Tomography;
Primary analysis conducted by MMRM and p-value <0.05
Phase 3 considerations: Dose - $1x10^{10}$ vg per eye; Primary Endpoint – Lesion Size Reduction; Secondary Endpoint – EZ Preservation

OCU410 Demonstrates Statistically Significant Reduction in Lesion Size at 12 Months

OCU410 shows ~2X effect size compared to approved therapies

Potentially addresses current unmet need in treating GA:

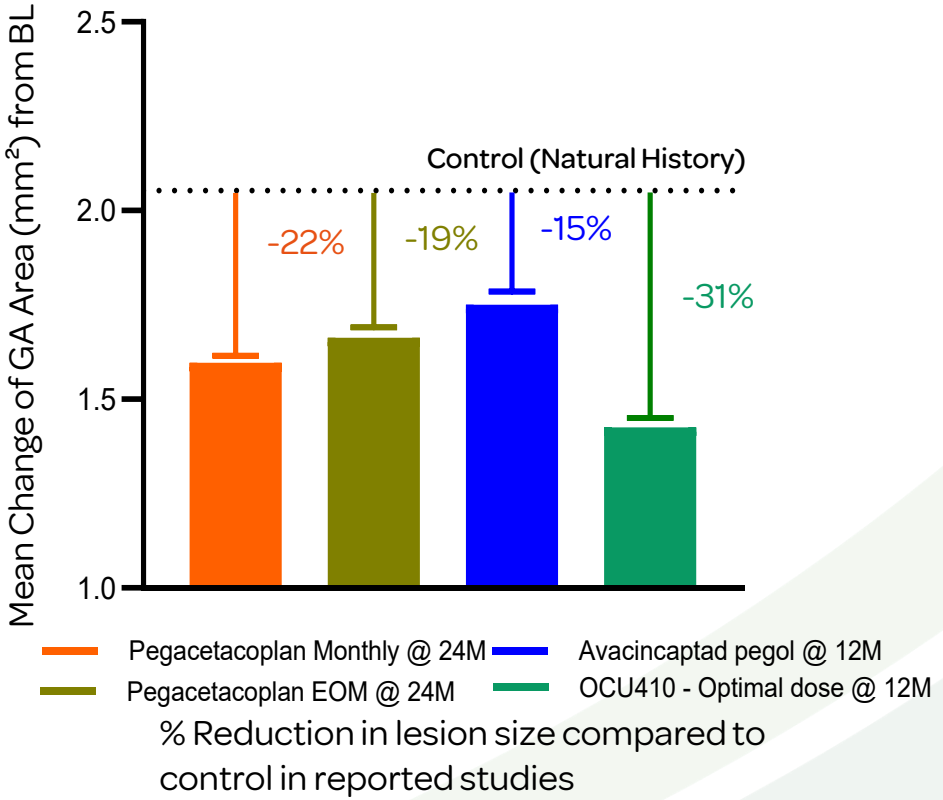
- Potential one-time treatment for life versus 6-12 injections per year
- May overcome up to 40% drop-out reported in the current standard of care

Topline, 12-month efficacy results in Phase 1 and Phase 2:

- Promising efficacy in Phase 1 and Phase 2
- Apparent structural preservation on GA lesion
- EZ preservation may support visual function

Topline data suggests favorable safety and tolerability profile:

- No SAEs and AESIs deemed related to OCU410



% Reduction in lesion size compared to control in reported studies

References: Apellis OAKS/DERBY (Heier et al, Lancet, Product Insert), Iveric GATHER 2 (Liao 2023, Khanani 2024, Lancet/Ophthalmology, Product Insert), Natural History Meta-analysis (Fleckenstein 2018, Ophthalmology). Change from Baseline for OCU410 was against ArMaDa control subjects; Dropout rates for approved therapies reported after 10 injections (PIPER|SANDLER Industry Note, June 2025);
OCU410 Optimal Dose = Medium Dose

Phase 3 – Assess Efficacy, Safety and Tolerability of OCU410 in GA

Trial Design

MTD
Established in Phase 1

Optimal Dose
established in Phase 2

Randomized 2:1 (N=237)

79
Control Group
No Treatment

158
Treatment Group
1×10^{10} vg per eye in 200 µL

Endpoints

Target Population

Adults (55+years) with geographic atrophy secondary to dry AMD (55+ years), early to late-stage disease

Primary

12-month change in GA lesion size from baseline vs. control

Measured in square root mm by fundus autofluorescence (FAF)

Secondary

Proportion of subjects with LLVA ≥15 Letter Loss from Baseline to M12 as assessed by ETDRS visual charts at two consecutive visits

12-month change in EZ Loss Area in study eyes vs. control (SD-OCT)

Phase 3 ArMaDa Trial: NCT07770828

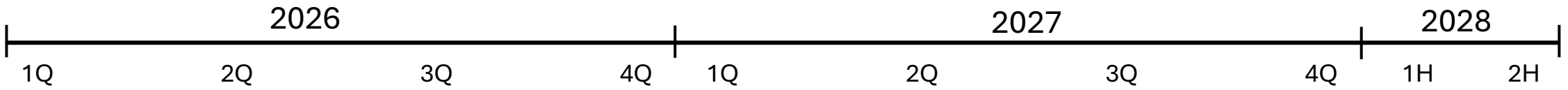
Ocugen Hopes to Deliver on Its Promise to Transform the Treatment Landscape for Patients with GA

OCU410 potentially creates a new standard of care



- **First-in-class** RORA MOA designed to support central retina and photoreceptor integrity
- **Promising Phase 2 results** indicate 31% reduction in lesion size and 27% slower EZ loss
- **Potential to eliminate treatment burden** and patient fatigue to reduce treatment attrition
- **Optimized Phase 3 trial design** and targeted GA lesion size for vision preservation
- **Current Global Phase 3**, n=~237, >95% power, Initiated in 3Q 2026, First patient dosed

Anticipated Milestones – Three BLAs by 2028



OCU400
Retinitis Pigmentosa

- Phase 3 Topline Data
- **BLA Submission**
- Approval/ Launch

OCU410ST
Stargardt Disease

- 100% Enrollment Completion
- Phase 3 Topline Data
- **BLA Submission**
- Approval/ Launch

OCU410
Geographic Atrophy

- Phase 2 Study Results
- Initiate Phase 3
- Phase 3 Enrollment Completion
- **BLA Submission**



Advancing cures for blindness

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