An Ongoing Phase 1b/2 Open-label Clinical Trial to Evaluate the Safety and Efficacy of AU-011 for the Treatment of Choroidal Melanoma – Study Update

Prithvi Mruthyunjaya, MD, MHS

Associate Professor of Ophthalmology

Director, Ocular Oncology Service

Director, Vitreoretinal Surgery Fellowship

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Mary M. and Sash A. Spencer Center For Vision Research

Disclosures

- Consultant:
  - Castle Biosciences
  - Aura Biosciences, Arix Biosciences

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Co-authors and Disclosures

- Chris Bergstrom, Abdhish R. Bhavsar, Antonio Capone, Hakan Demirci, Peter Hovland, James Howard, Cameron Javid, Ivana K. Kim[1], Brian Marr[2], Tara McCannel, Amy C. Schefler[2], Michael Seider, Tony Tsai, Cadmus Rich[3] & Carol L. Shields[2]

[1]Allergan (Research support), Biophytis, Castle Biosciences, Kodiak Sciences, Novartis (Consultant)
[2]Aura Biosciences (Code C/Consultant)
[3]Aura Biosciences (Code E/Employment)

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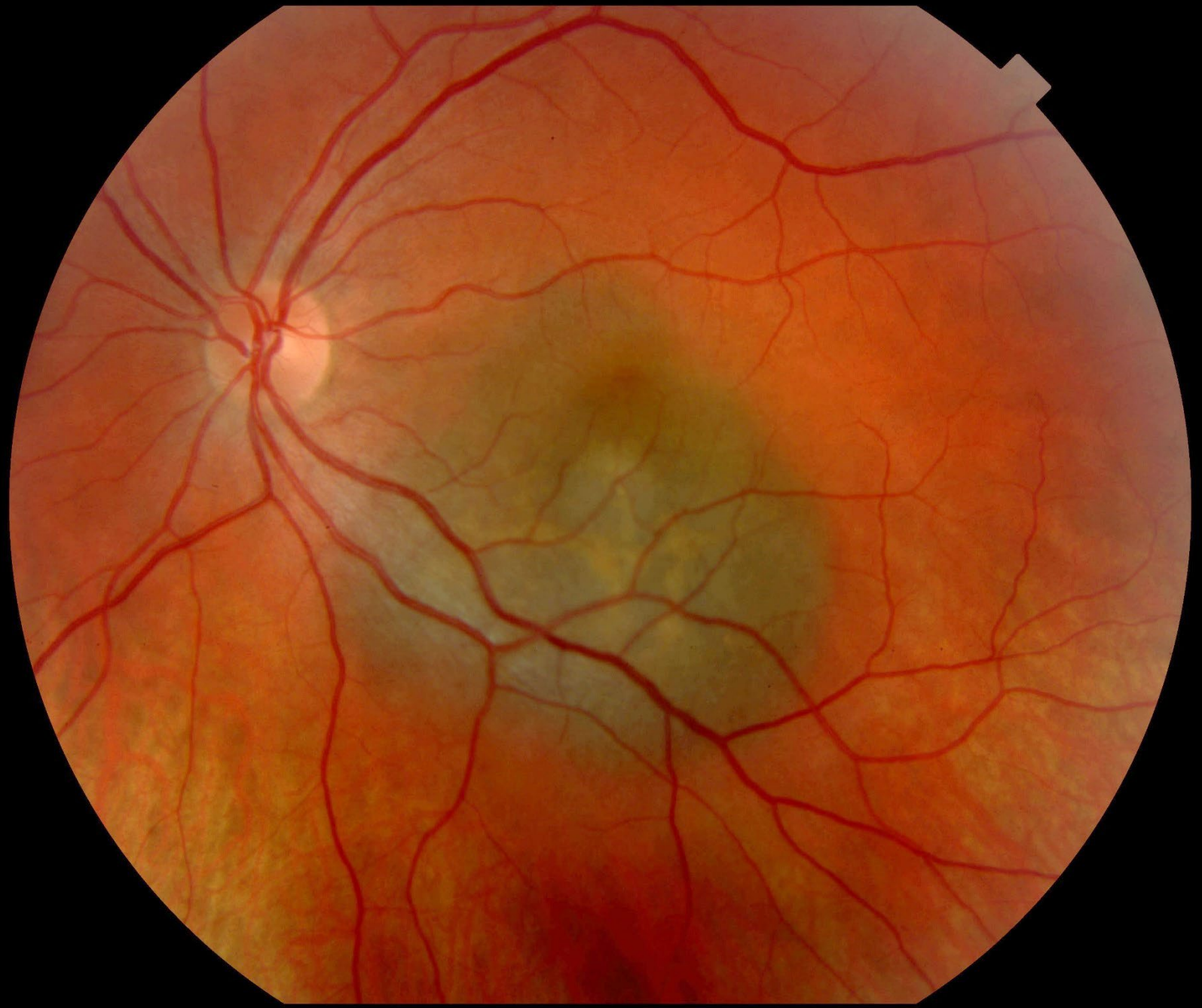
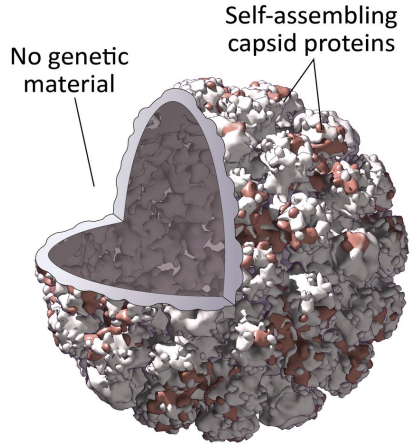
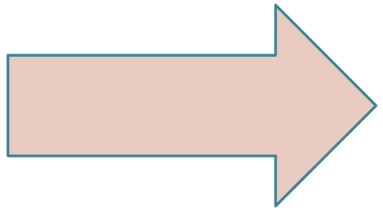
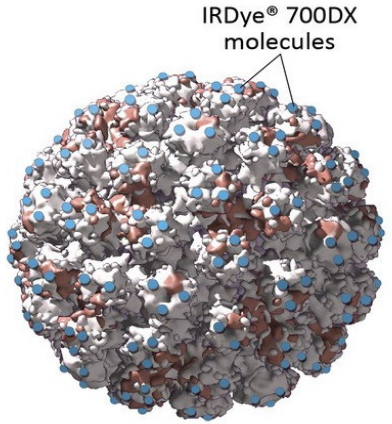


Aura Technology: Viral-Like Particle Bioconjugates



Synthetic Viral-Like Particle (VLP)

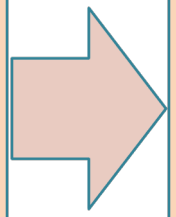




AU-011 VLP Bioconjugate (VPB)

Tumor Targeted Platform

- Technology discovered at National Cancer Institute (NIH) by Dr. J.T. Schiller[1]
- Synthetic viral-like particles (VLP): recombinantly derived and then spontaneously reassemble into a viral-like capsid structure (like the original virus)
- Tumor targeting[2]: binds to specifically modified heparan sulphate proteoglycans (HSPGs) expressed on the tumor cell membrane



AU-011: VLP bioconjugate (VPB)

- ~200 IRDye® 700DX molecules covalently conjugated to synthetic capsid without interfering with tumor targeting
- Novel MoA: Laser activation causes acute cellular necrosis and subsequent immune activation
- Dual targeting potential to improve safety: Bioconjugates preferentially bind tumor cells and laser focused on the tumor

1. Lasker Award 2017.
2. Human papillomavirus capsids preferentially bind and infect tumor cells; Kines et al; *International Journal of Cancer* ,138;901–911, February 2016.

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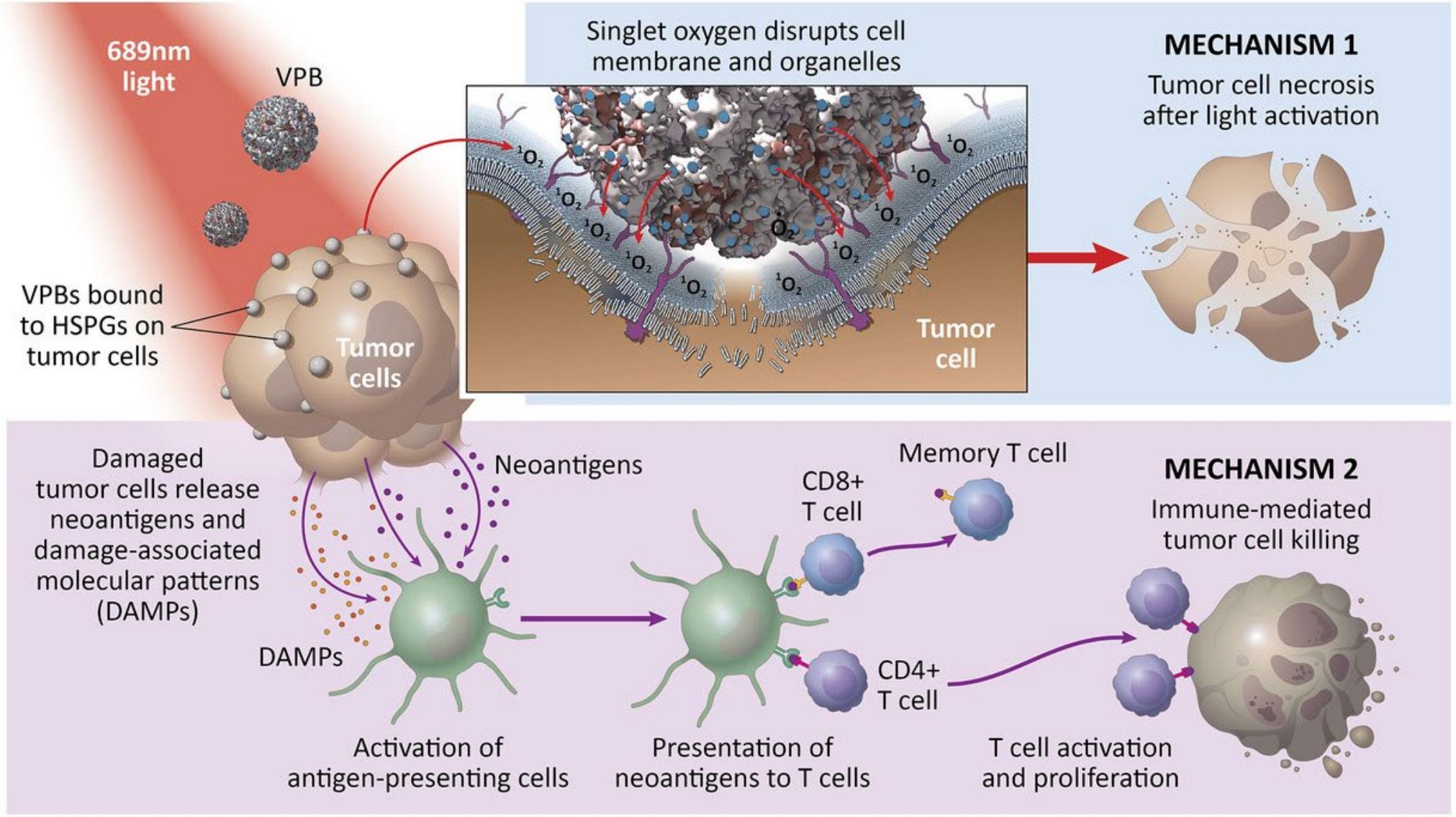
AU-011: Novel Dual Mechanism of Action



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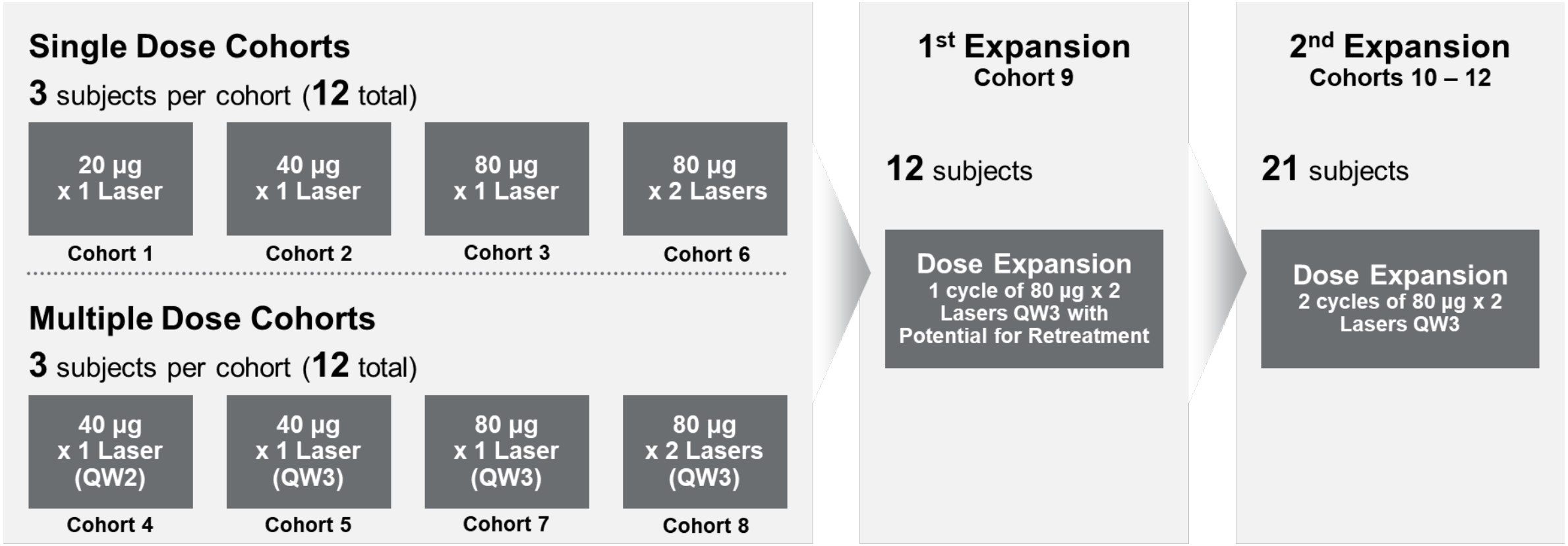
Study Design



56 Subjects Treated[#] – Enrollment Completed in January 2020

All enrolled subjects with clinical diagnosis of choroidal melanoma
8 sites completed 1st Expansion; 6 more sites added for 2nd Expansion – 14 sites total
[#] 56/57 enrolled subjects have been treated with AU-011; 1 subject being observed for growth, not treated yet

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Study Objectives, Key Trial Visits & Patient Populations

Primary Objective ➡ Safety

- Drug or treatment related adverse events/SAEs

Secondary Objective ➡ Efficacy

- Local tumor control
- Visual acuity preservation
- Tumor growth rate
- Preliminary efficacy at 3 months

Key Populations & Subpopulations

All Enrolled* Subjects with Clinical Diagnosis** of CM	N=57
Subjects with Documented Growth (DG) • Any level of documented growth in tumor thickness	n=31
Phase 3 Eligible*** • Documented growth ≥0.3mm within 2 years • Thickness 0.5-3.0mm, LBD ≤13.0mm, Tumor Volume ≤50 mm^3	n=21
Phase 3 Eligible – Therapeutic Regimen (2 cycles) • Phase 3 Eligible as above • 2 cycles of (80µg x 2 lasers x 3 weekly treatments)	n=15
Phase 3 Eligible – High-Risk for Vision Loss • Phase 3 Eligible with tumors ≤3.0mm from the fovea and/or optic nerve	n=18

**57 total enrolled in trial, 56 treated as of Mar 2, 2020 data cutoff*
***Clinical diagnosis criteria discussed with FDA and original criteria discussed in EU scientific advice*
****Subjects with eligibility criteria similar to those for a planned Phase 3 study*

- Key trial visits and long-term follow-up for safety

Note: LBD = largest basal diameter

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Preliminary Safety Findings: Treatment Related Adverse Events

All Treated Subjects (n=56) Key Treatment Related Adverse Events	Mild	Moderate	Severe	Total*
Anterior Chamber Inflammation	46.4%	21.4%	0	67.9%
Vitreous Inflammation	37.5%	41.1%	3.6%	82.1%
Increase in Intraocular Pressure	17.9%	23.2%	0	41.1%
Keratic Precipitates	12.5%	1.8%	0	14.3%
Peritumoral RPE/ Pigmentary Changes**	10.7%	1.8%	0	12.5%
Floaters/ Vitreous Opacity	10.7%	0	1.8%	12.5%
All Treated Subjects (n=56) Related Serious Adverse Events	**Mild**	**Moderate**	**Severe**	**Total**
Vision Loss (juxtafoveal tumor)	0	0	3.6%	3.6%

Managed with steroids and topical ocular anti-hypertensives; and majority resolved without clinical sequelae

Data cutoff Mar 2, 2020; average follow up period of 12 months

*Table presents percentage of subjects with AEs by severity and overall; subjects with more than 1 AE is counted in the highest severity group
**Similar changes reported as exam findings in other subjects, not considered clinically significant

Favorable Preliminary Safety Profile

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Preliminary Efficacy findings: Visual Acuity Preservation with AU-011

Follow-up for Up to 24 Months

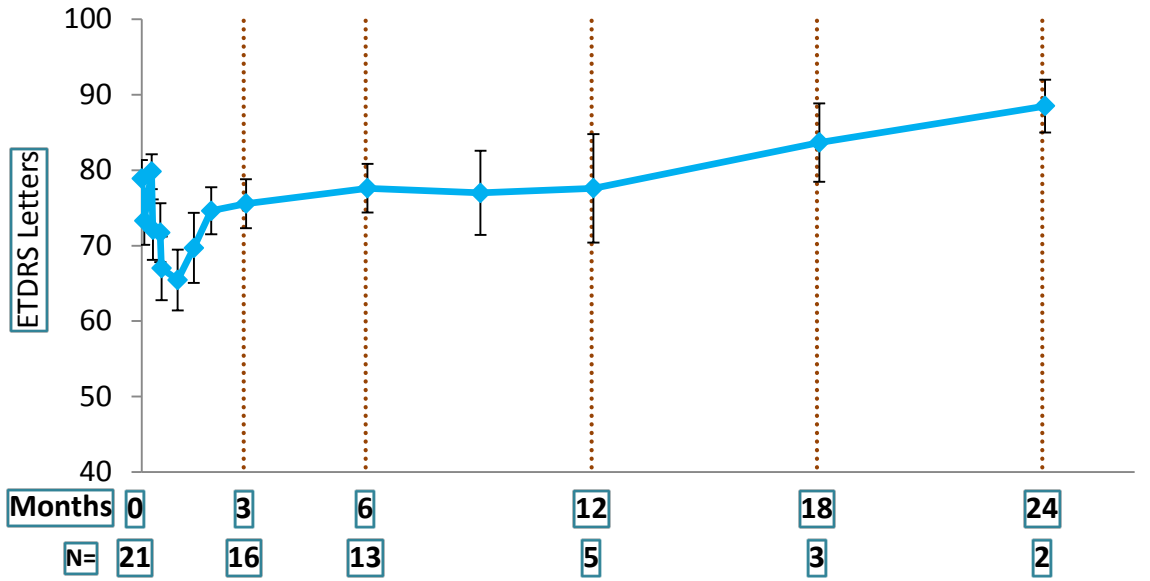
Vision Preservation Rate

	Total Subjects (n)	Mean/ Median Follow up (months)	Vision Failure*	Vision Preservation Rate
All Dose Cohorts				
All Subjects	56	12/ 12	4*	93%
Subjects with Documented Growth	31	10/ 6	2	94%
Ph3-Eligible Subjects	21	8/ 6	1	95%
Ph3-Eligible High-Risk for Vision Loss Subjects	18	6/ 3	1	94%
Therapeutic Regimen (2 cycles)				
Ph3-Eligible Subjects	15	3/ 3	1	93%

*Vision Failure: long term decrease in vision >15 letters (>3 lines)
*1 subject not included as loss of vision was due to tumor progression and plaque treatment, not related to AU-011

Mean Best Corrected Visual Acuity

Phase 3 Eligible Subjects, n=21



Graph shows mean (± SEM) BCVA by study visit in Phase 3 eligible subjects (n=21), post-standard of care/radioactive treatment data not included.
Data cut-off Mar 2, 2020

Favorable Preliminary Vision Results

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Preliminary Efficacy findings: Tumor Control with AU-011

Follow-up for Up to 24 Months

Populations	Subjects (n)	Mean/ Median Follow-up (months)	Tumor Control Failure*	Tumor Control Rate
All Dose Cohorts				
All Subjects	56	12/ 12	19	66%
Documented Growth Subjects	31	10/ 6	5	84%
Ph3-Eligible Subjects	21	8/ 6	3	86%
Ph3-Eligible High-Risk for Vision Loss Subjects	18	6/ 3	2	89%
Therapeutic Regimen (2 cycles)				
Ph3-Eligible Subjects	15	3/ 3	0	100%

*Tumor control Failure includes subjects that met definition of Tumor Progression (Growth in Tumor Height >0.5mm; LBD >1mm due to Definitive Tumor Growth) or patients treated with radioactive standard of care by investigator criteria before they met the definition of progression

Planned Ph3 Study Design has >90% Power Assuming 70% Tumor Control Rate at 12 mos

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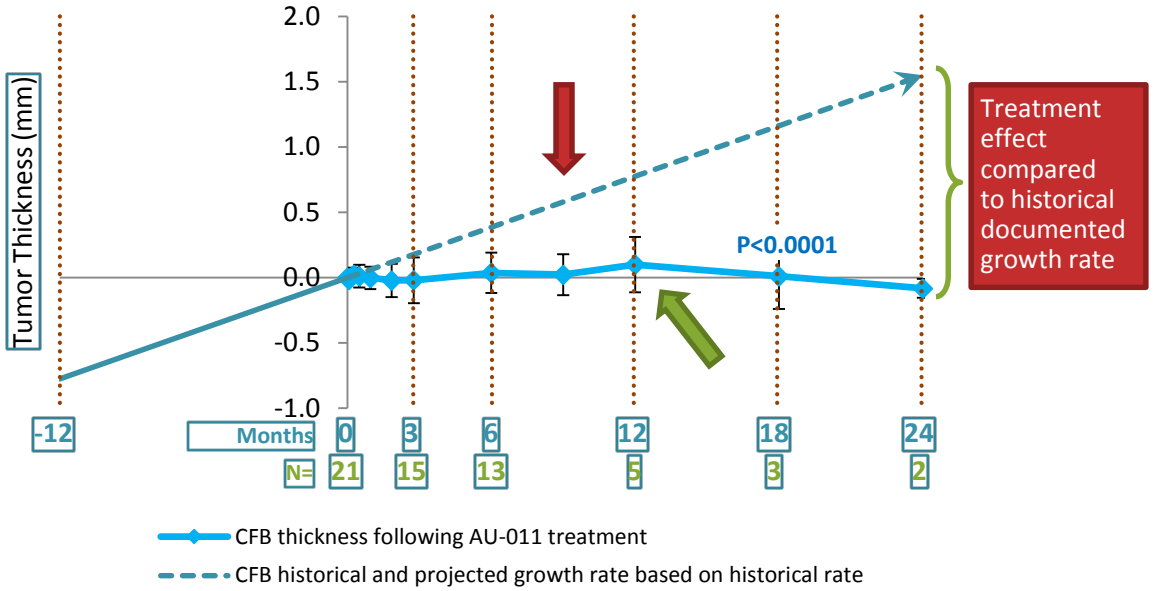
Preliminary Efficacy findings: Tumor Growth Control After Treatment with AU-011

Within Subject Comparison Analysis in Ph3 Eligible Subjects

Mean Change from Baseline in Tumor Thickness
Phase 3 Eligible Subjects, n=21



- A projected growth rate of 0.78 ± 0.11 mm/year (Mean ± SEM) in tumor thickness based on a mean of documented growth rates in the same 21 subjects prior to treatment is shown with dashed orange line extending linearly from the solid (historical) orange line
- Data cutoff Mar 2, 2020

Change in Tumor Growth in DG Subjects

	n	Mean/ Median Follow-up (months)	Growth Rate Reduction (mm/yr)	p-value
Subjects with Documented Growth	**31**	**10/ 6**	**-0.582**	**<.0001**
Ph3 Eligible Subjects	**21**	**8/ 6**	**-0.773**	**<.0001**
Ph3 Eligible High-Risk for Vision Loss Subjects	**18**	**6/ 3**	**-0.605**	**<.0001**
Ph3 Eligible Subjects @Therapeutic Regimen (2 cycles)	**15**	**3/ 3**	**-0.682**	**<.0001**

Note: Tumor thickness growth rates/ slopes estimated using MMRM

Statistically Significant Impact on Tumor Growth – Used to Support Planned Ph3 Study Design

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Summary of Preliminary Results of Phase 1b/2 Study

Safety

- One and 2 cycles of AU-011 were generally well-tolerated to date
- Inflammation has been manageable, starts around the tumor and supports MOA
- Steroids can be started after inflammation is observed to allow potential immune response
- Re-treatment after 12 months was generally well tolerated

Efficacy Endpoints

Tumor control to date

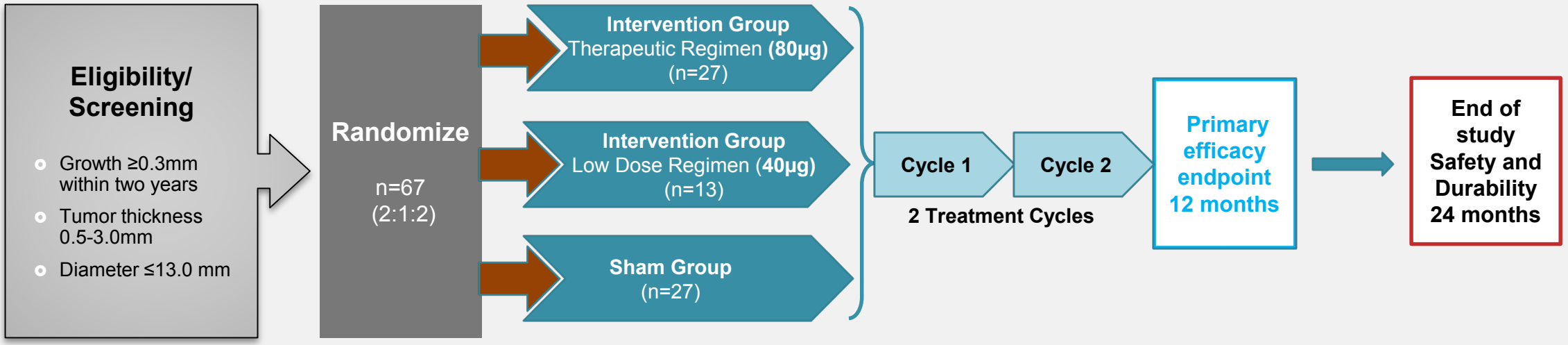
- Statistically significant reduction of tumor growth rate in subjects with documented growth
- Durability of tumor response observed at 24 months even at subtherapeutic doses in SAD
- >65% of all treated subjects demonstrated tumor control (TC) with up to 24 months follow up (average 12 months).
- TC rate is >85% in Ph3-Eligible subjects with 8 months average follow up

Vision preservation to date

- Vision preservation demonstrated in >90% of all subpopulations, including those with high risk lesions (within 3.0mm of fovea or optic nerve)
- The majority of subjects have stable vision (vision within 5 letters of baseline)

PH3 TRIAL DESIGN DISCUSSED WITH FDA

91% POWER WITH 67 SUBJECTS



Trial Endpoints

Primary Endpoint

- Composite-time to event endpoint at 12 months:
  - Disease progression, or
  - Visual acuity failure

Key Secondary Endpoints

- Disease progression at 12 months
- Change from baseline in tumor thickness at 12 months
- Within subject comparison of 80µg and 40µg AU-011 dose arms

Study to be performed at ~30 sites in US, EU, Australia/NZ, Israel and Canada

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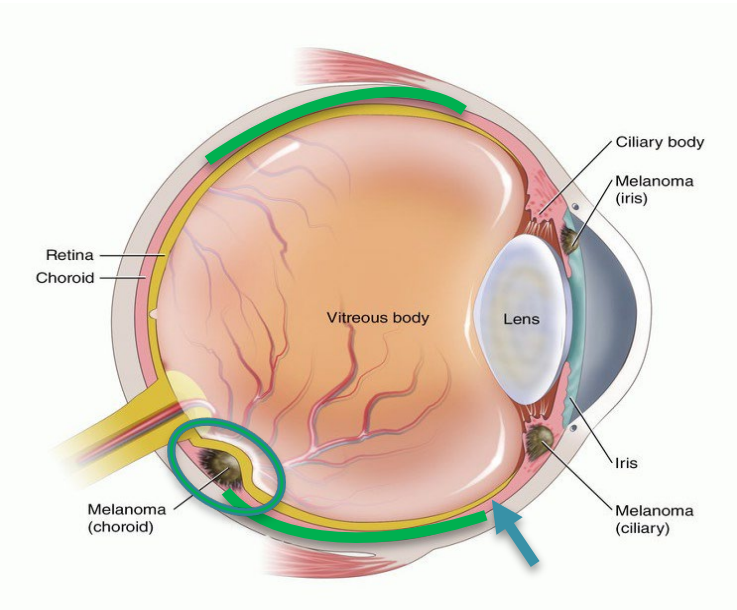
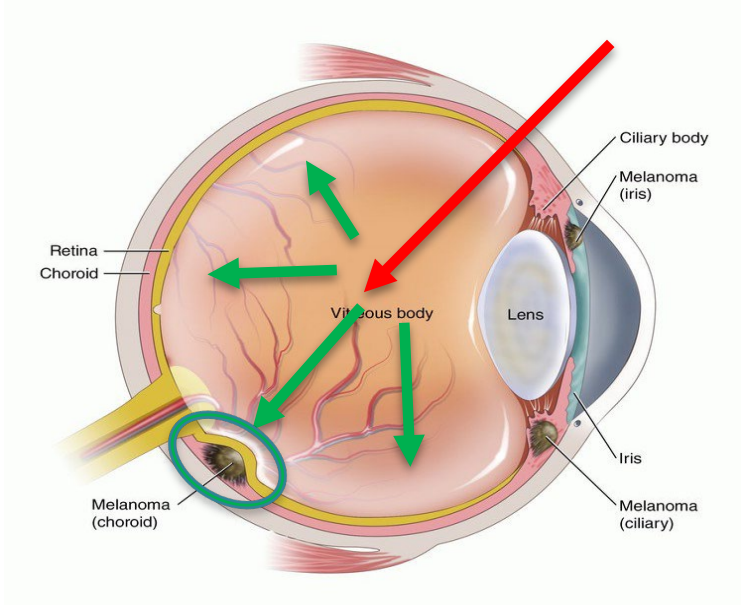
AU-011 is Being Developed to Treat Small and Medium Tumors

Further Studies Planned With Suprachoroidal and IVT Administration





Suprachoroidal

- Potential to treat small and medium tumors
- Maximize bioavailability at the site of the tumor
- Preclinical studies ongoing
- Ph 2 planned Q3 2020

Intravitreal

- Treatment of small tumors
- Ph1b/2 enrollment complete
- Ph3 planned 2H 2021

Currently targeting treatment of small tumors via intravitreal administration
Planning treatment of small and medium tumors via suprachoroidal administration

Participating Centers for Phase 1b/2 Trial

Dr. Carol Shields
Philadelphia, PA

Dr. Ivana Kim
Boston, MA

Dr. Brian Marr
New York, NY

Dr. Hakan Demirci
Ann Arbor, MI

Dr. Amy Schefler
Houston, TX

Dr. Tara McCannel
Los Angeles, CA

Dr. Antonio Capone Jr.
Royal Oak, MI

Dr. Abdhish Bhavsar
Minneapolis, MN

Dr. Tony Tsai

Dr. Michael Seider

Dr. Prithvi Mruthyunjaya

Dr. Cameron Javid

Dr. James Howard

Dr. Chris Bergstrom

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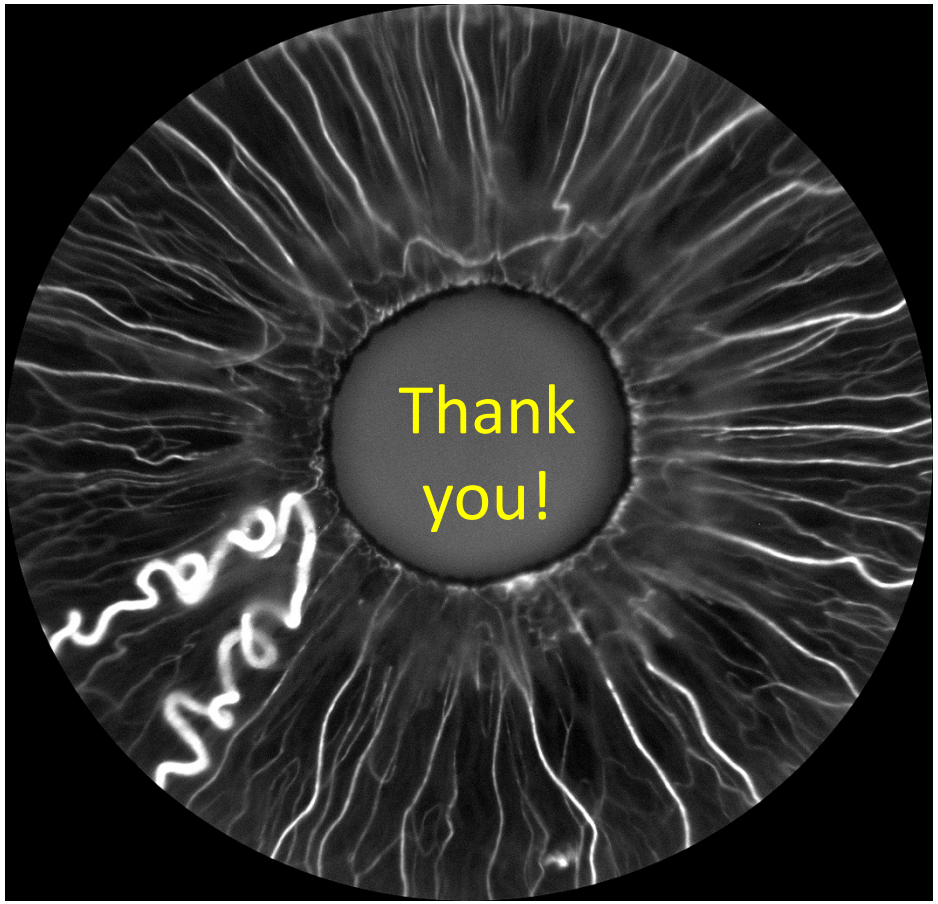

Orbital Eyelid Tumors

Ocular surface Tumors

Intraocular tumors Melanoma

Systemic cancers and the eye

Adult

Pediatric

Prithvi Mruthyunjaya, MD, MHS *Director*

Andrea Kossler, MD *Director, Orbital Oncology*

Ben Erickson, MD

Albert Wu, MD

ocularoncology@stanford.edu

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