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Corporate Presentation

March 2024

Envisioning a new way to treat cancer

Legal Disclosure

This presentation contains forward-looking statements, all of which are qualified in their entirety by this cautionary statement. Many of the forward-looking statements contained herein can be identified by the use of forward-looking words such as "may", "anticipate", "believe", "could', "expect", "should", "plan", "intend", "estimate", "will", "potential" and "ongoing", among others, although not all forward-looking statements contain these identifying words. These forward-looking statements include statements about the initiation, timing, progress, results, and cost of our research and development programs and our current and future preclinical studies and clinical trials, including statements regarding the timing of initiation and completion of studies or trials and related preparatory work, the period during which the results of the trials will become available, and our research and development programs; our ability to successfully manufacture our drug substances and product candidates for preclinical use, for clinical trials and on a larger scale for commercial use, if approved; the ability and willingness of our third-party strategic collaborators to continue research and development activities relating to our development candidates and product candidates; our ability to obtain funding for our operations necessary to complete further development and commercialization of our product candidates; our ability to obtain and maintain regulatory approval of our product candidates; the size and growth potential of the markets for our product candidates, and our ability to serve those markets; our financial performance; and the implementation of our business model, and strategic plans for our business and product candidates.

Except as otherwise noted, these forward-looking statements speak only as of the date of this presentation, and we undertake no obligation to update or revise any of such statements to reflect events or circumstances occurring after this presentation. Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified and some of which are beyond our control, you should not rely on these forward-looking statements as predictions of future events. For a discussion of these and other risks and uncertainties, and other important factors, any of which could cause our actual results to differ from those contained in the forward-looking statements, see the section entitled "Risk Factors" in our most recent Annual Report on Form 10-K and Quarterly Report on Form 10-Q filed with the Securities and Exchange Commission, as well as discussions of potential risks, uncertainties, and other important factors in our other subsequent filings with the Securities and Exchange Commission. The events and circumstances reflected in our forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements. We caution you not to place undue reliance on the forward-looking statements contained in this presentation.

This presentation discusses product candidates that are under preclinical or clinical evaluation and that have not yet been approved for marketing by the U.S. Food and Drug Administration or any other regulatory authority. Until finalized in a clinical study report, clinical trial data presented herein remain subject to adjustment as a result of clinical site audits and other review processes. No representation is made as to the safety or effectiveness of these product candidates for the use for which such product candidates are being studied.

This presentation shall not constitute an offer to sell or the solicitation of an offer to buy, nor shall there be any sale of these securities in any state or other jurisdiction in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such state or other jurisdiction.

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Aura Biosciences – Developing a Novel Class of Drugs in Oncology

VIRUS LIKE DRUG CONJUGATES (VDCs) FOR THE TREATMENT OF SOLID TUMORS

Ocular Oncology Franchise

- Choroidal Melanoma – Global Ph 3 CoMpass Trial:
  - FPI was Q4 2023
  - Most US sites activated; Trial actively enrolling
  - Special Protocol Assessment (SPA) Agreement with FDA
  - Ph 3 assumptions supported by Ph 2 data
- Choroidal Metastasis – Ph 2 trial planned to initiate in mid-2024
- Second ocular indication potentially doubles market opportunity

Urologic Oncology Franchise

- Clinical complete response in first patient with single dose
- Data supports dual mechanism
- Updated protocol includes both NMIBC and MIBC

Strong Cash Position

- Current cash runway expected to fund operations into 2H 2026

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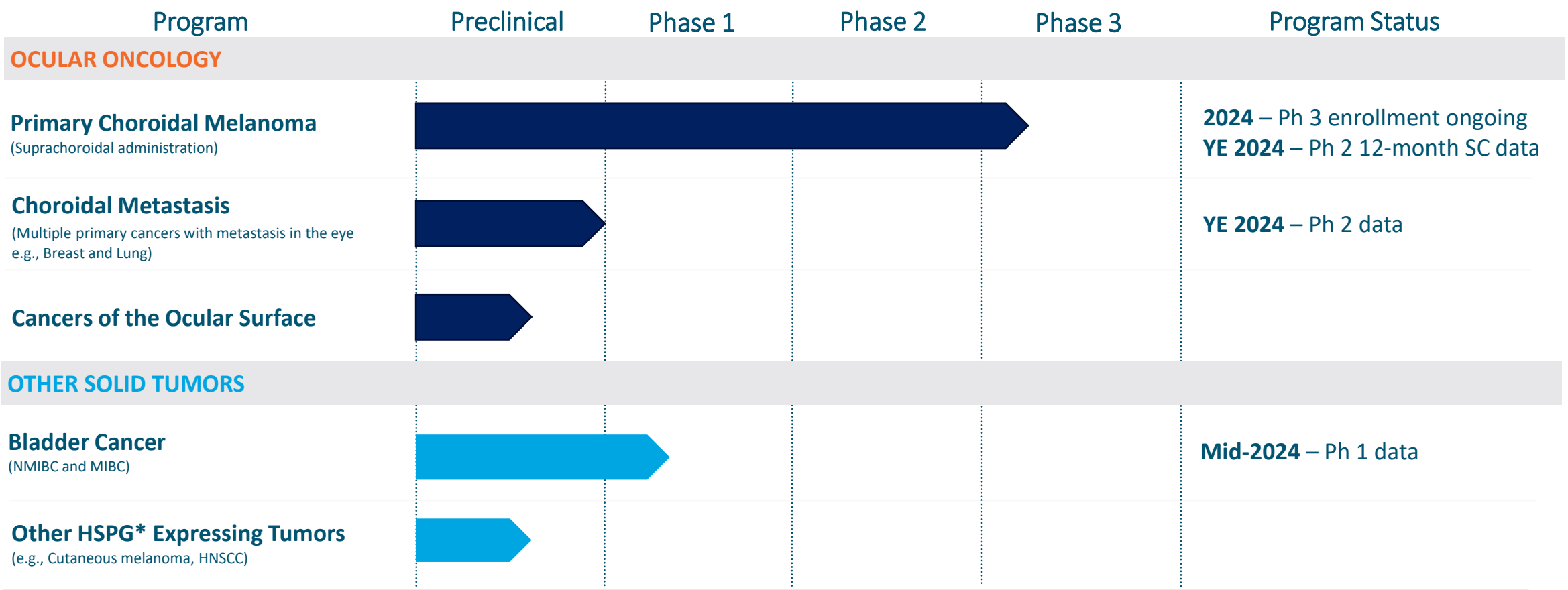
Pipeline Targeting Life-Threatening Cancers with High Unmet Needs

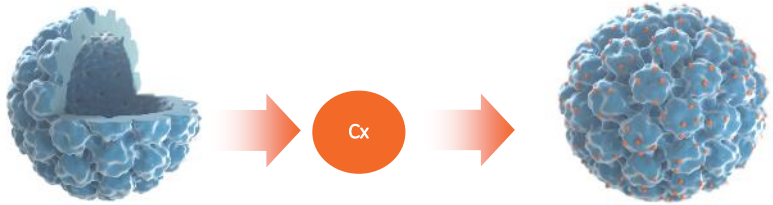


Global Commercial Rights for All Product Candidate Indications

*VDCs bind to a subset of modified tumor associated glycosaminoglycans (GAGs) that are part of the heparan sulphate chain of HSPGs. *Schiller et al. Viruses* 2022, *14*(8), 1656
SC – suprachoroidal

Targeted Oncology Platform: Virus-Like Drug Conjugates (VDCs)

Virus-Like Particle Conjugated to a Cytotoxic Payload

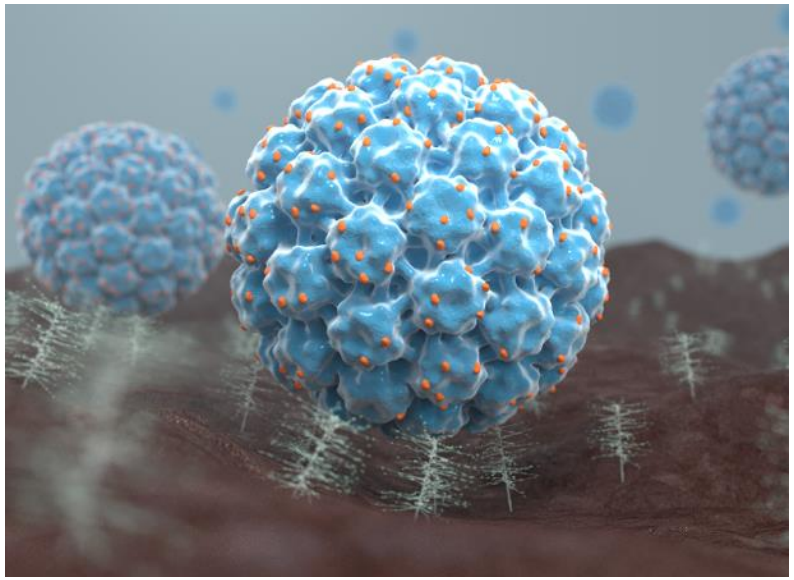


Virus-Like Particle (VLP)

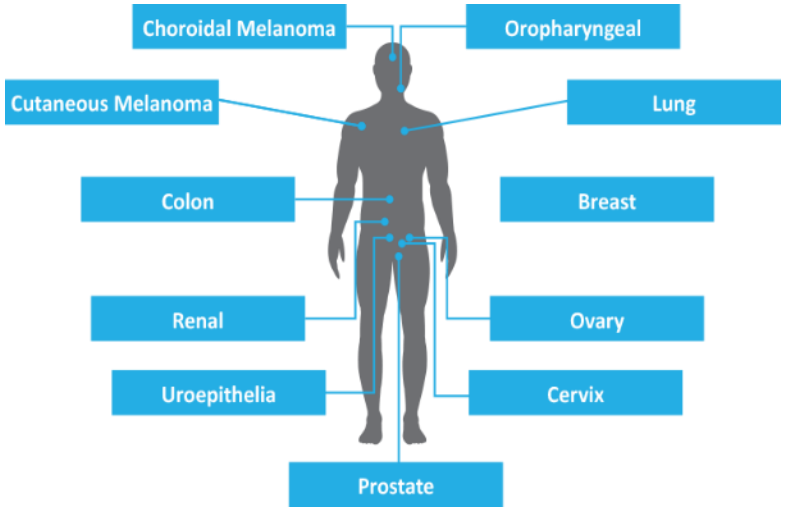
Cytotoxic Drug

Virus-Like Drug Conjugate (VDC)

Selective Binding to Tumor Associated HSPGs*



Potential Treatment of Multiple Solid Tumors



Potential Key Differentiation: Potency, Multivalent Binding and Selectivity

Kines et al; *International Journal of Cancer*, 138;901–911, February 2016; Kines et al; *Molecular Cancer Therapeutics*, 17(2) February 2018; Kines et al; *Cancer Immunology Research*, May 2021

*VDCs bind to a subset of modified tumor associated glycosaminoglycans (GAGs) that are part of the heparan sulphate chain of HSPGs. Schiller et al. Viruses 2022, 14(8), 1656

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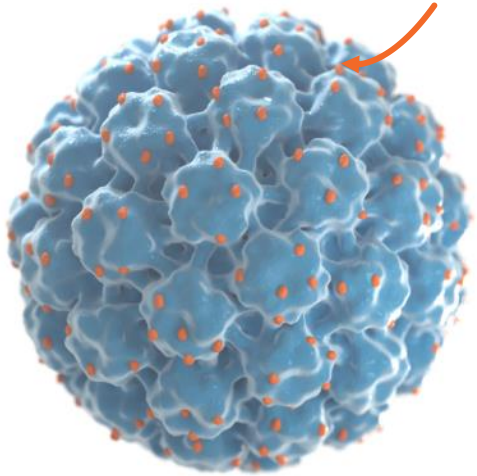
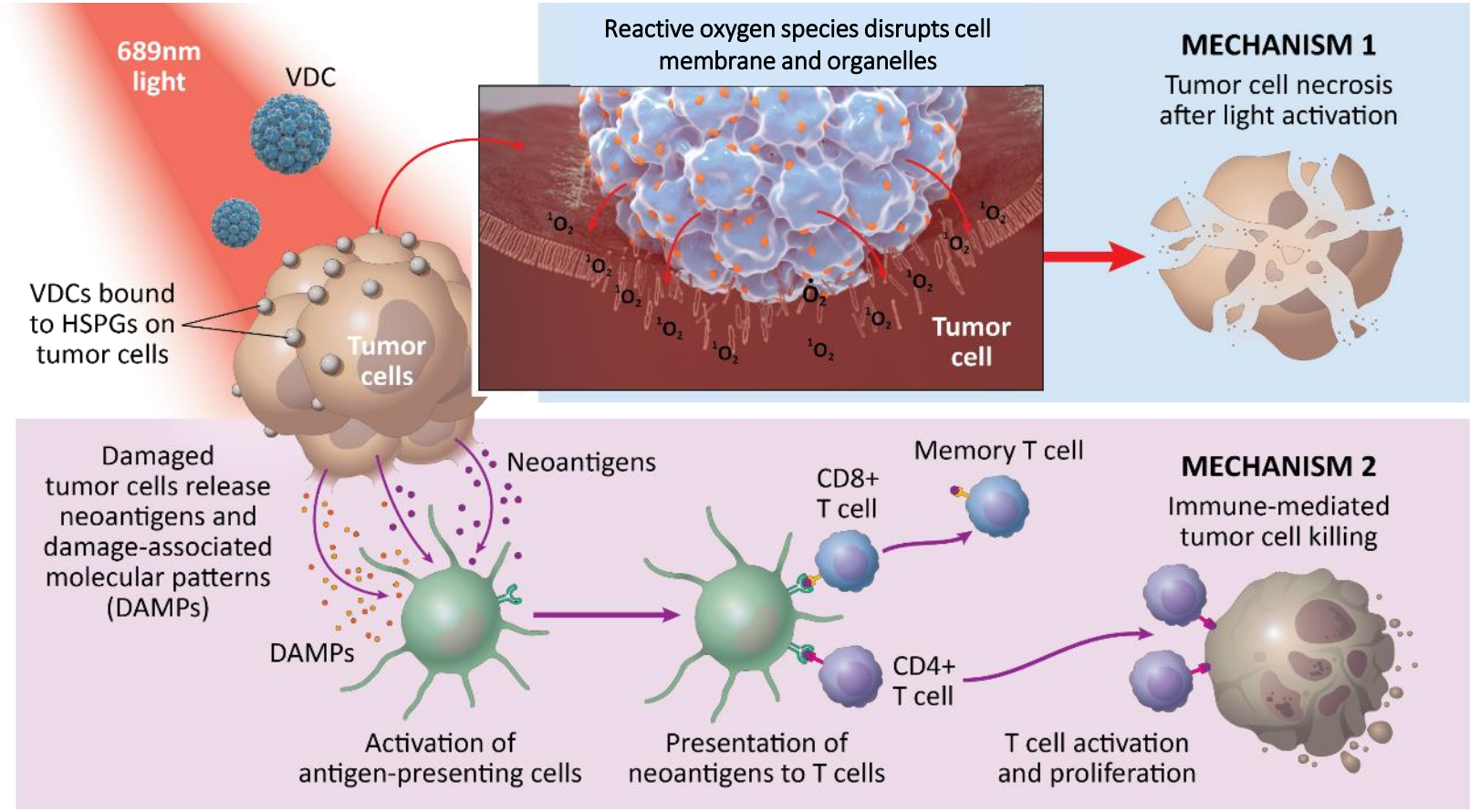
Bel-sar is a VDC with a Novel Dual Mechanism of Action

Light Activatable Drug



Bel-sar

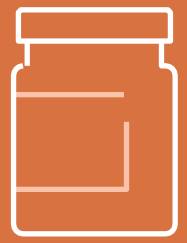
Bel-sar is a novel VDC that consists of VLP conjugated to ~200 molecules of light activatable drug



Potential Key Differentiation: Agnostic to Genetic Mutations, Less Susceptible to Resistance Mechanisms, Long Term Anti-tumor Immunity

Kines et al; Cancer Immunology Research, May 2021
VDCs bind to a subset of modified tumor associated glycosaminoglycans (GAG) that are part of the heparan sulphate chain of HSPGs. Schiller et al. Viruses 2022, 14(8), 1656
Bel-sar – Belzupacap Sarotalocan

Ocular Oncology Franchise



Bel-sar
INN: belzupacap sarotalocan

Target Indications:

- Early-Stage Choroidal Melanoma
- Choroidal Metastasis
- Other Ocular Cancers

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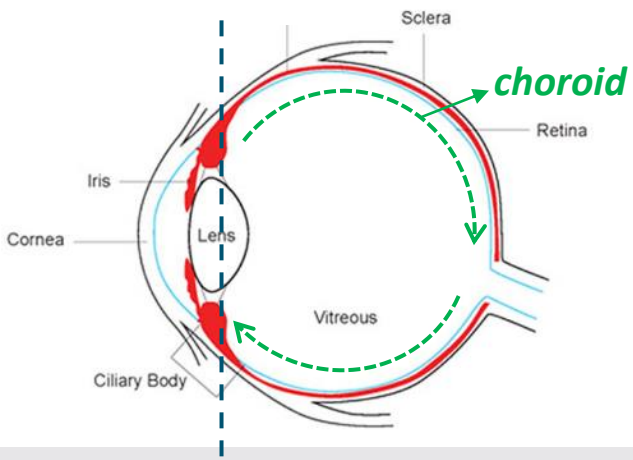
Primary Choroidal Melanoma—High Unmet Medical Need

Choroid is 90%
of the uvea[1]

50% of patients develop metastasis within 15 years (metastatic uveal melanoma)[2]

Uvea: Choroid, Ciliary Body and Iris



Most common primary intraocular cancer in adults[2]

Impacts **~11,000** patients in US/Europe per year[3]

~80% patients diagnosed with **early-stage disease**[3]

Choroidal Melanoma is a Rare and Life-Threatening Primary Ocular Cancer with No Drugs Approved

1. Heiting, G. Iris/uvea of the eye. Accessed Oct. 3, 2023. https://www.allaboutvision.com/en-gb/resources/uvea-iris-choroid/
2. Kaliki S, Shields CL. Uveal melanoma: relatively rare but deadly cancer. *Eye* (Lond). 2017;31(2):241-257. doi:10.1038/eye.2016.275
3. Clearview & Putnam & Assoc. Market Research

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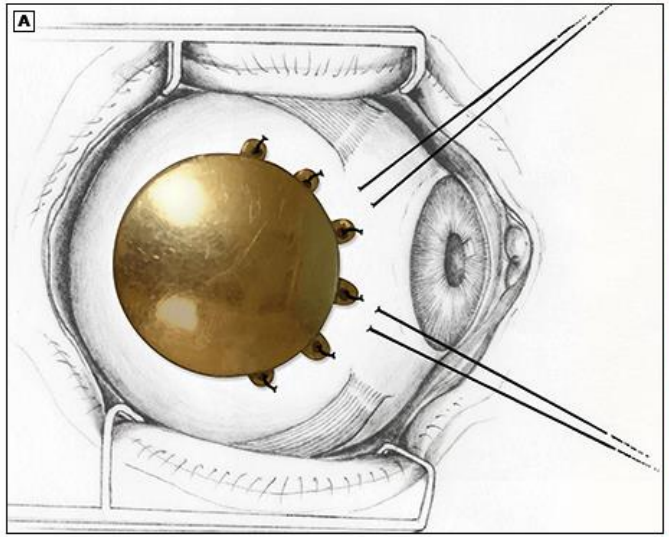
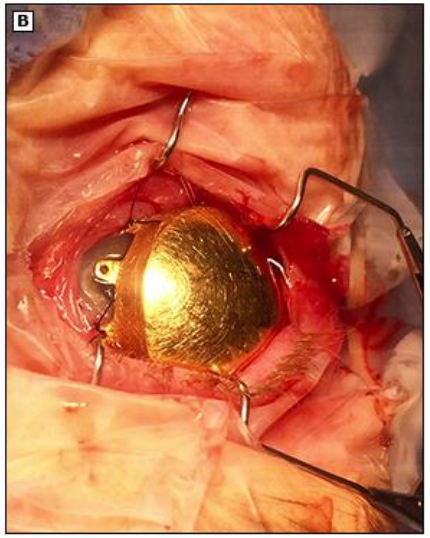
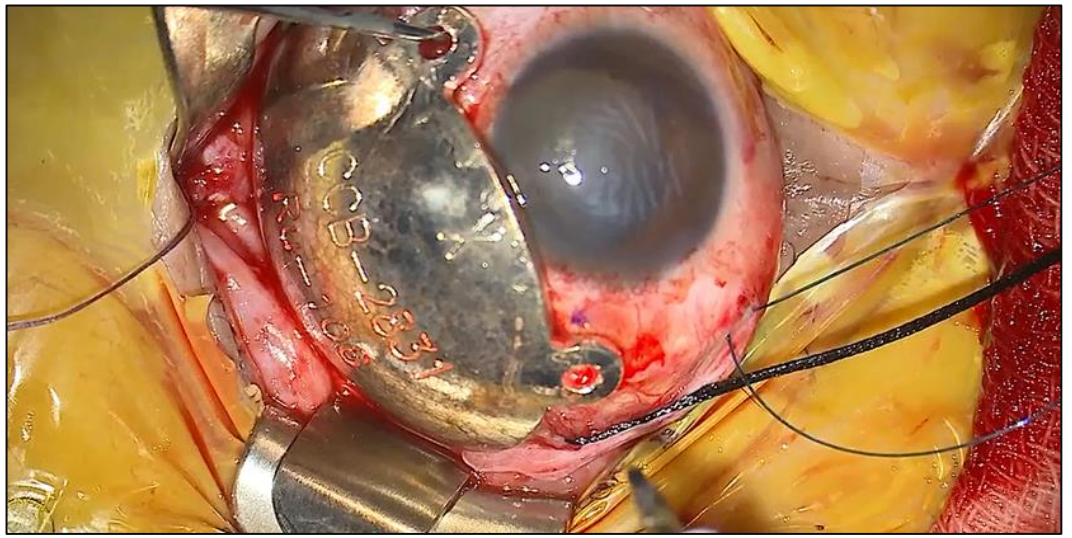
Radiotherapy is the Standard of Care for Early-Stage Disease

Plaque Brachytherapy for Choroidal Melanoma Requires Invasive Surgery with Irreversible Complications and Does Not Prevent Metastasis





(A) Schematic drawing showing a Collaborative Ocular Melanoma Study (COMS) style plaque sutured to the sclera overlying the location of the uveal melanoma[1]
(B) Intraoperative photograph showing COMS plaque in place. The plaque stays in place for 3 to 7 days[1]



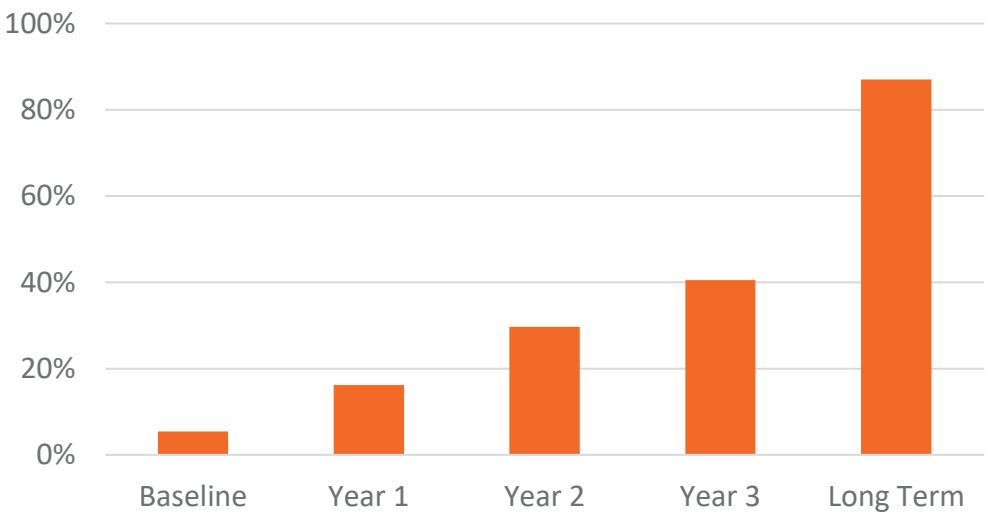
Surgical treatment of large choroidal melanoma with ruthenium 106 plaque brachytherapy[2]

Maculopathy, Cataract, Glaucoma, Vitreous Detachment and Vitreous Hemorrhage are Common Vision Threatening Complications of Brachytherapy[3]

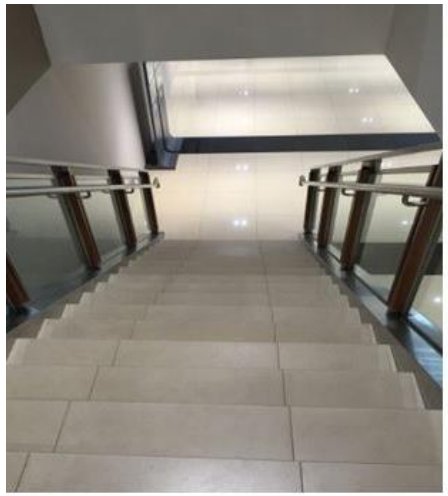
1. Up To Date. Plaque brachytherapy for uveal melanoma. Accessed September 20, 2023. https://ykhoa.org/d/image.htm?imageKey=ONC/116591
2. Kim M, Lee SM, Lee. Surgical treatment of a large choroidal melanoma. American Academy of Optometry 2022 Video Program. March 1, 2023. Accessed September 20, 2023. https://www.aao.org/education/annual-meeting-video/surgical-treatment-of-large-choroidal-melanoma
3. Peddada KV, Sangani R, Menon H, Verma V. Complications and adverse events of plaque brachytherapy for ocular melanoma. *J Contemp Brachytherapy*. 2019;11(4):392-397. doi:10.5114/jcb.2019.87407

Up to 87% of Patients Will be Blinded when Treated with Radiotherapy

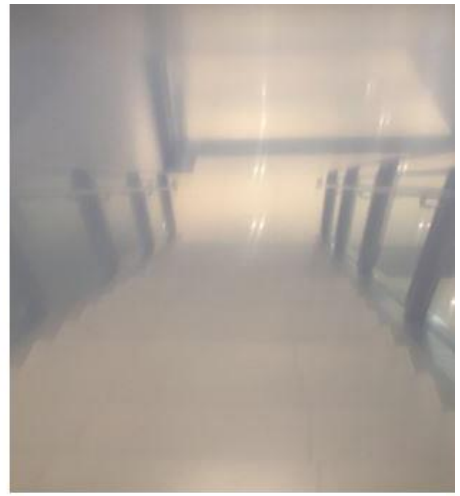
Proportion of Patients Legally Blind (BCVA ≤20/200) after Brachytherapy[1,2]



Contrast Sensitivity Diminishes Significantly within the First Year after Brachytherapy and Continues to Deteriorate Over Time[2]



Normal Vision



Vision with Reduced Contrast Sensitivity

Visual Acuity, Color Vision and Contrast Sensitivity Decrease Significantly within the First Year after Treatment and Continue to Decrease Over Time

1. Jarczak J, Karska-Basta I, Romanowska-Dixon B. Deterioration of visual acuity after brachytherapy and proton therapy of uveal melanoma, and methods of counteracting this complication based on recent publications. *Medicina* (Kaunas). 2023;59(6):1131.
2. Tsui I, Beardsley RM, McCannel TA, Oliver SC, et al. Visual acuity, contrast sensitivity and color vision three years after iodine-125 brachytherapy for choroidal and ciliary body melanoma. *Open Ophthalmol J*. 2015;9:131-5.

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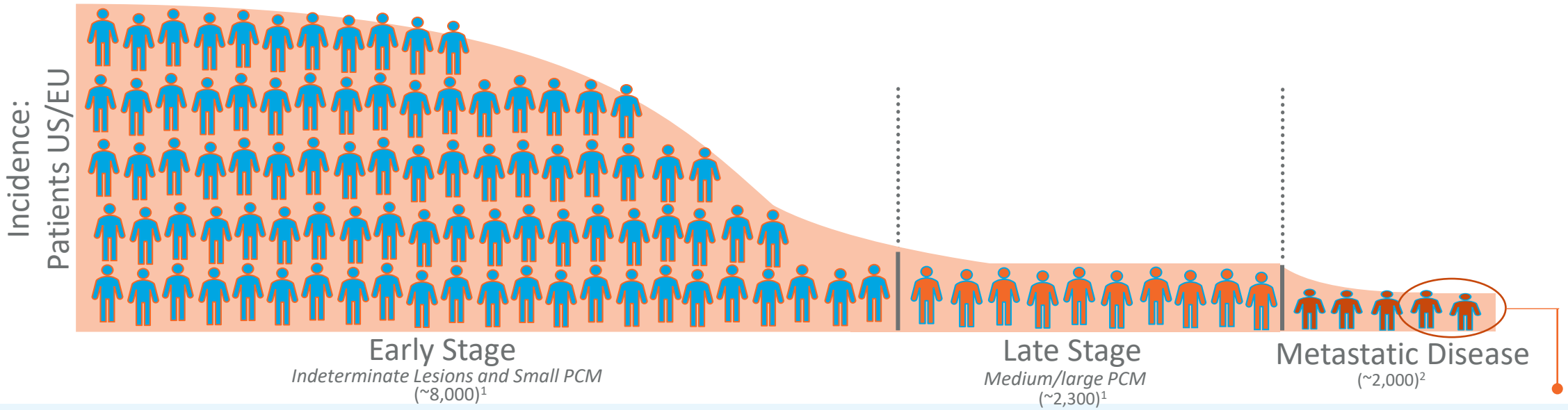
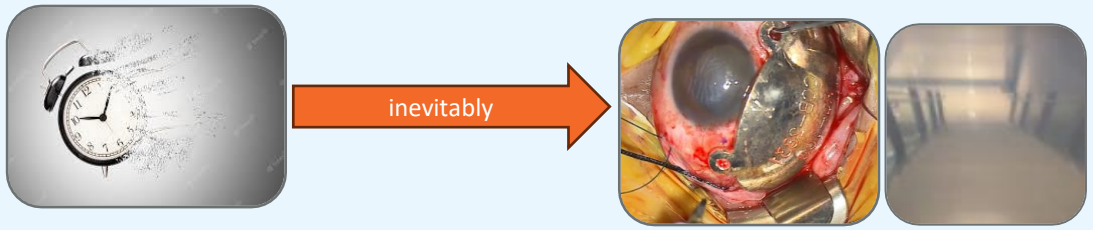
Benefit/Risk of Radiotherapy Drives "Watch and Wait" in Patients with Early-Stage Disease

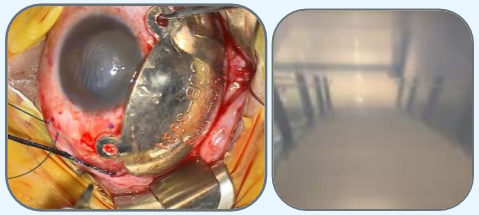


Current Treatment

Watch and Wait/Brachytherapy



Brachytherapy: Vision Loss/Blindness



Systemic Chemotherapy (KIMMTRAK)

Most of the Addressable Population is Untreated Due to Risk of Treatment Related Vision Loss and Severe Comorbidities

1. Clearview & Putnam & Assoc. Market Research
2. Kaliki S, Shields CL. Uveal melanoma: relatively rare but deadly cancer. *Eye* (Lond). 2017;31(2):241-257. doi:10.1038/eye.2016.275

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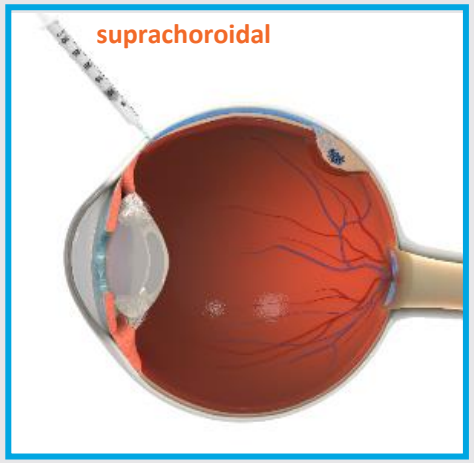
Bel-sar has the Potential to be the First Approved Therapy in Primary Choroidal Melanoma

Bel-sar is Delivered by Simple Suprachoroidal Injection



Two injections (2min. each) 30 min apart

3-4h

Light Activation with Standard Ophthalmic Laser

10-30 min. procedure

In-Office

Goals of Treatment

- Local tumor control
- Preservation of vision
- No radiation-related morbidity
- Opportunity to treat early and reduce risk of metastases
- Improvement in safety and quality of life

Ocular Oncology Franchise Represents a Multi-Billion Dollar Addressable Market Opportunity

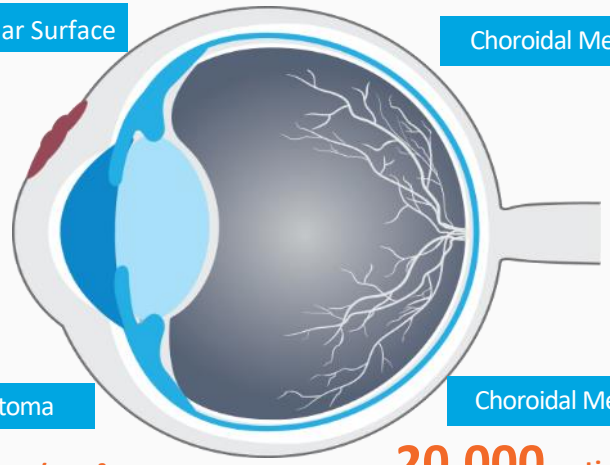
~66,000 patients/year

Ocular Oncology Franchise total addressable market (US/EU)

~35,000 patients/year[3]
Cancers of the Ocular Surface

11,000 patients/year[1]
Choroidal Melanoma

Multibillion $ addressable market opportunity



500 patients/year[2]
Retinoblastoma

20,000 patients/year[1]
Choroidal Metastasis

11,000 patients/year

Choroidal Melanoma patients diagnosed each year (US/EU)

~80%

of patients are diagnosed at the early stage (indeterminate lesions (ILs) and small tumors)

Current radiotherapy treatment

Leaves ~87% of patients with major irreversible vision loss

~100

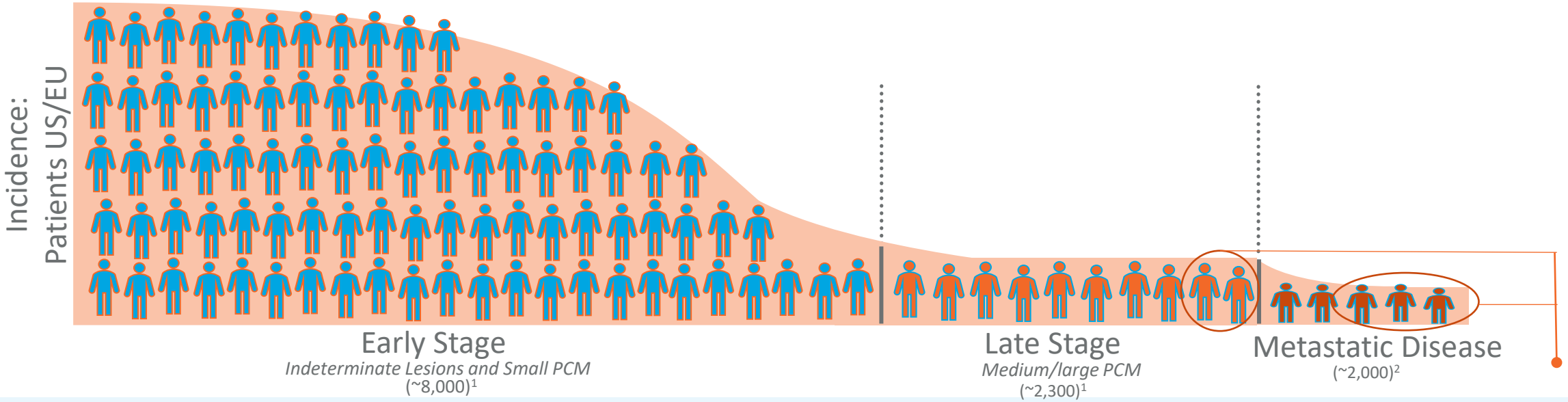
Ocular Oncologists in US/EU — focused call point

<20

Field Based Team
Intend to add small sales force to launch globally

1. ClearView & Putnam & Assoc. Epidemiology Analysis Choroidal Melanoma and Choroidal Metastasis
2. American Cancer Society- Retinoblastoma statistics
3. Includes Conjunctival Melanoma, Primary Acquired Melanosis, Squamous Cell Carcinoma and Ocular Surface Squamous Neoplasia (https://pubmed.ncbi.nlm.nih.gov/12788119/; https://pubmed.ncbi.nlm.nih.gov/19628487/; https://pubmed.ncbi.nlm.nih.gov/8676629/; https://pubmed.ncbi.nlm.nih.gov/29511061/; https://pubmed.ncbi.nlm.nih.gov/9037556/)

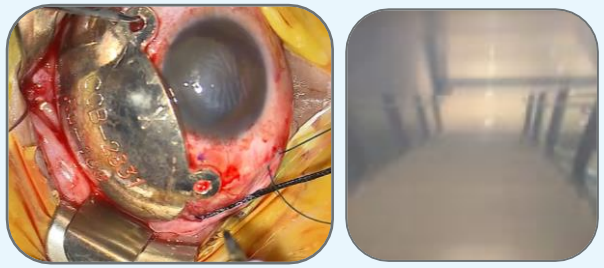
Potential Future Patient Treatment Journey



Treatment

First Line Treatment with Bel-sar

Brachytherapy: Vision Loss/Blindness



Chemotherapy (KIMMTRAK)

Bel-Sar has the Potential to be an Effective, Vision Preserving Therapy for the Treatment of Indeterminate Lesions and Small Choroidal Melanoma

1. Clearview & Putnam & Assoc. Market Research
2. Kaliki S, Shields CL. Uveal melanoma: relatively rare but deadly cancer. *Eye* (Lond). 2017;31(2):241-257. doi:10.1038/eye.2016.275

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Bel-sar has Demonstrated a Favorable Profile for the Treatment of Early-Stage Disease

Adverse Event or Adverse Reactions	KIMMTRAK[1] Any Grade	Darovasertib + Crizotinib Combination[2] Any Grade	Bel-Sar Any Grade*
Cytokine release syndrome	89%	Not Disclosed	0%
Rash	83%	Not Disclosed	0%
Pyrexia	76%	Not Disclosed	0%
Pruritus	69%	Not Disclosed	0%
Fatigue	64%	40%	0%
Nausea	49%	79%	0%
Vomiting	Not Disclosed	52%	0%
Chills	48%	Not Disclosed	0%
Hypo-/hyperpigmentation	47%	Not Disclosed	0%
Abdominal pain	45%	Not Disclosed	0%
Edema	45%	57%	0%
dermatitis acneiform	Not Disclosed	44%	0%
Hypotension	Not Disclosed	34%	0%
Hypoalbuminemia	Not Disclosed	32%	0%
Dizziness	Not Disclosed	28%	0%

1. Immunocore Corporate Presentation. 2023 August. Slide 12. https://ir.immunocore.com/static-files/415c5cbb-caae-4ffa-9beb-cb40cfcfc132
2. IDEAYA Clinical Update Presentation. 2023 April 24. Slide 10.

Note: Certain data in this presentation are based on a cross-trial comparisons and are not based on any head-to-head clinical trials. Cross-trial comparisons are inherently limited and may suggest misleading similarities or differences. Results of head-to-head comparisons may differ significantly from those set forth herein.

*Safety outcomes for ongoing Ph2 study with bel-sar presented on slide 22

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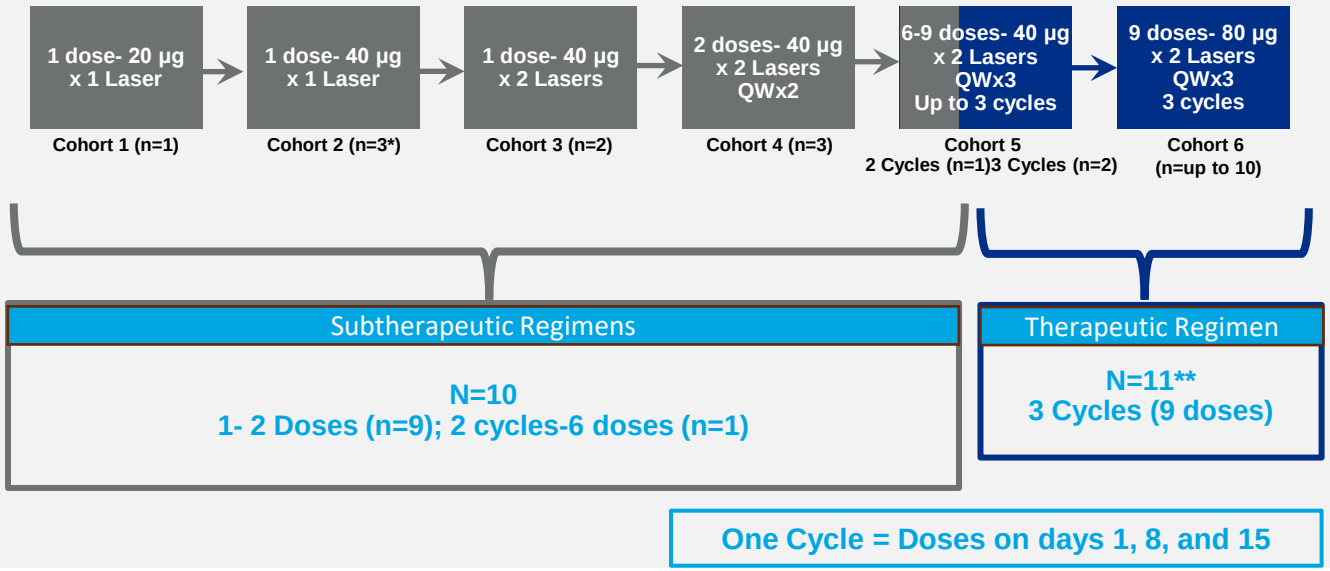
Choroidal Melanoma Ph 2 Data

Ph 2 Trial – Dose Escalation and Expansion with Suprachoroidal Administration

Patient Population Representative of Early-Stage Disease: Indeterminate Lesions and Small Choroidal Melanoma

Endpoint	Endpoint Definitions
Tumor Progression	Growth in Tumor Height ≥0.5mm or ≥1.5 mm in Largest Basal Diameter (LBD)
Visual Acuity Loss	Decrease from Baseline: ≥15 letters
Tumor Thickness Growth Rate	Change in Rate of Growth of Tumor Thickness

Trial Design – Enrollment Complete (n=22)

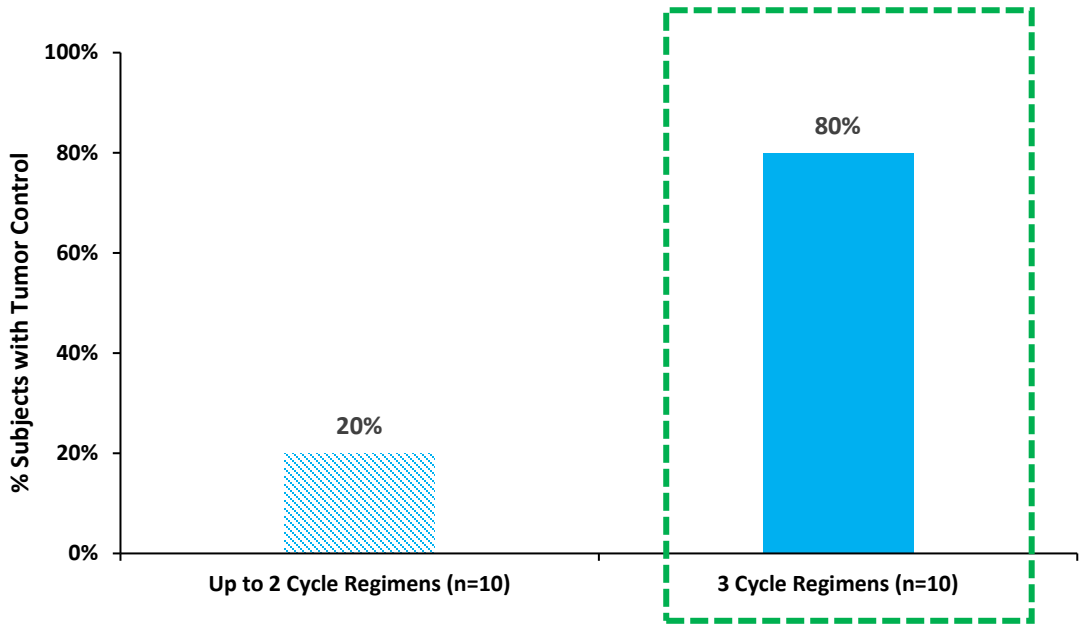


Goal: To Determine Safety, Optimal Dose and Therapeutic Regimen with Suprachoroidal Administration

*Cohort 2: 2 subjects were planned; third subject was additionally enrolled due to dose error in 1 subject
**12 patients enrolled, 1 subject who discontinued after 1 cycle due to unrelated SAEs is not included in data analysis (n=11). Data that follows will be based on a cohort of 11
ClinicalTrials.gov Identifier: NCT04417530 ; AU-011-202

High Local Complete Response Rate at 12 Months Follow Up*

Dose Response: Subtherapeutic vs Therapeutic Regimen



>90% Completed 12 Months

Dose/Regimen	Total Patients (n)	Tumor Control Rate
Subtherapeutic Regimens		
Single dose up to 2 cycles	10	20% (2/10)
Therapeutic Regimen		
3 Cycles (n=11)	11	73% (8/11)
3 Cycles and Ph 3 eligible (n=10)*	10	80% (8/10)

* One subject with circumpapillary tumor that did not meet Ph 3 criteria is not included

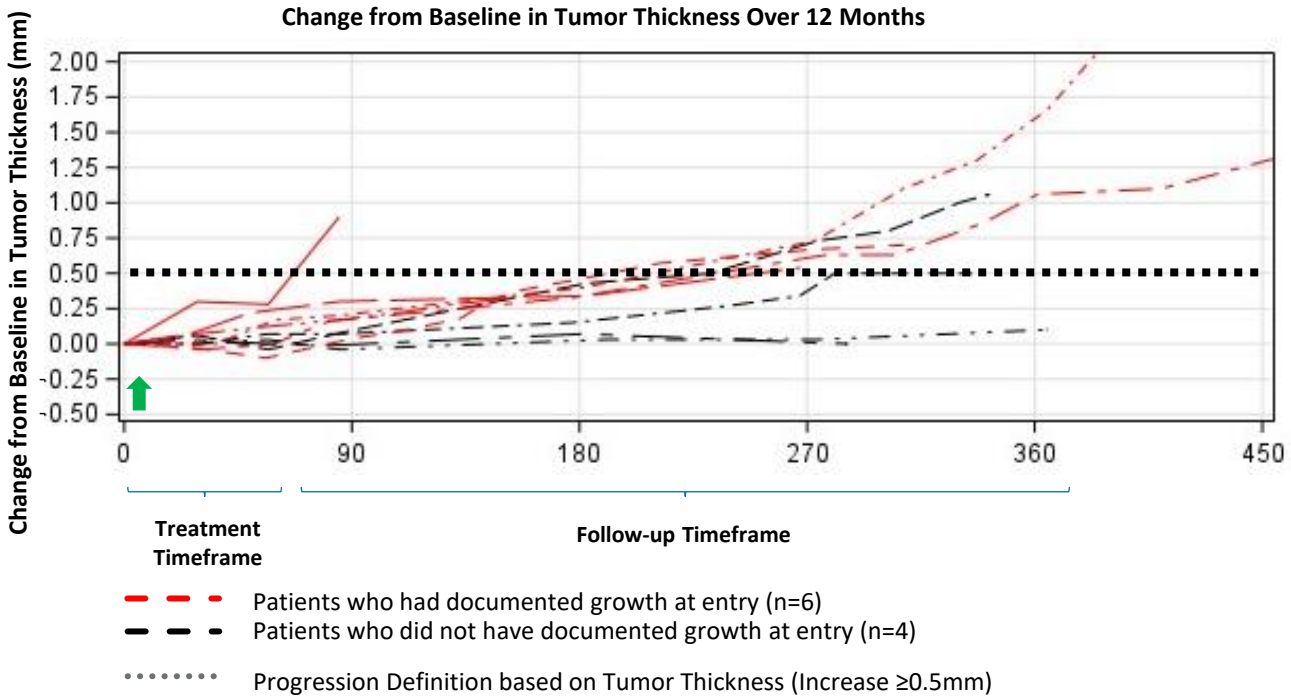
Tumor Progression: change from baseline in thickness ≥0.5mm; or in LBD ≥1.5mm confirmed by at least one repeat assessment
August 3, 2023, data on file Aura Biosciences

High Local Complete Response Rate with Therapeutic Regimen in Ph 3 Eligible Patients with Active Growth

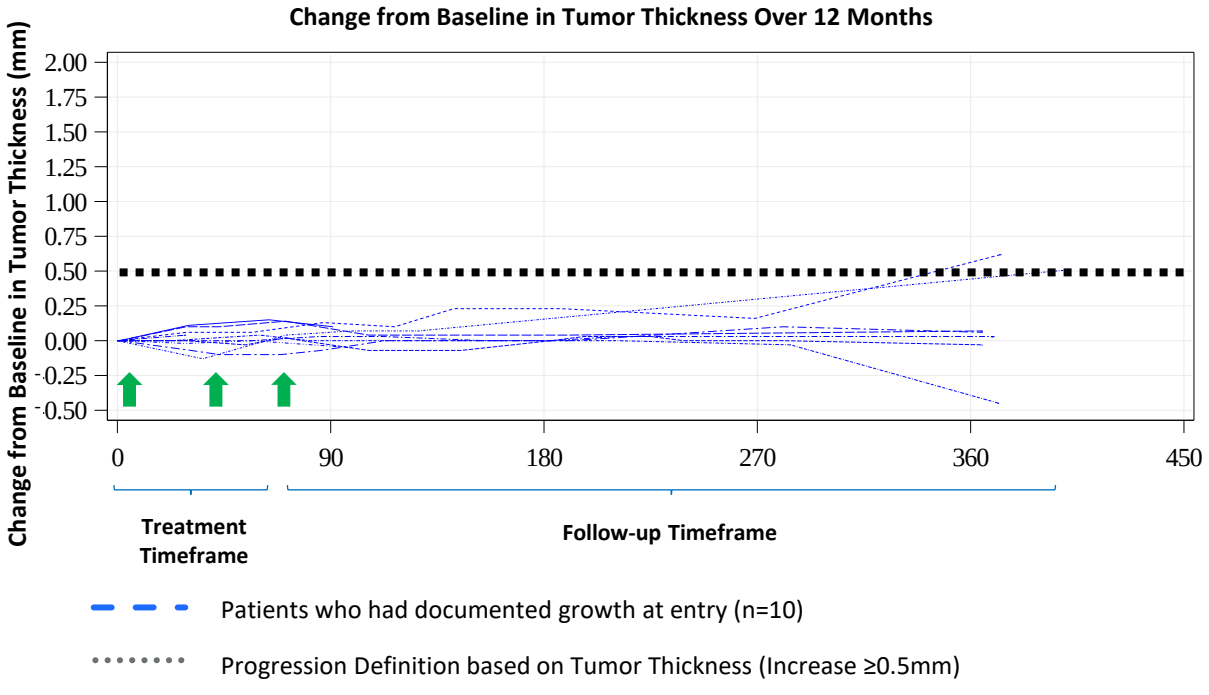
*A local complete response, or CR, in early-stage choroidal melanoma is described as tumor control and complete arrest of tumor growth by ocular oncologists.

Durable Local Complete Response Rates Observed in Ph 3 Population Treated with Therapeutic Regimen*

Subtherapeutic Regimens (n=10)



Active Growth and 3 Cycle Regimens (n=10)



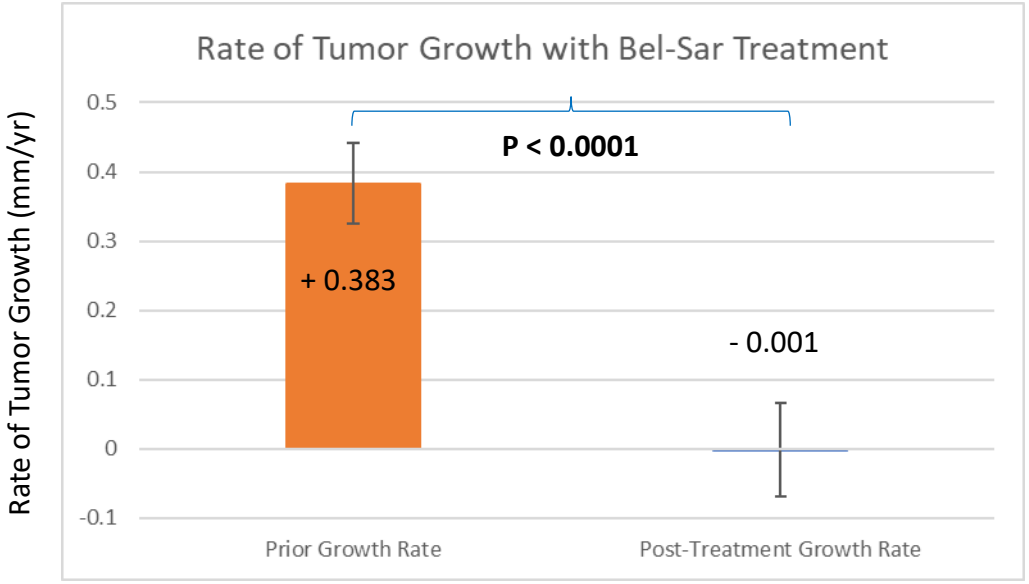
August 3, 2023, data on file Aura Biosciences

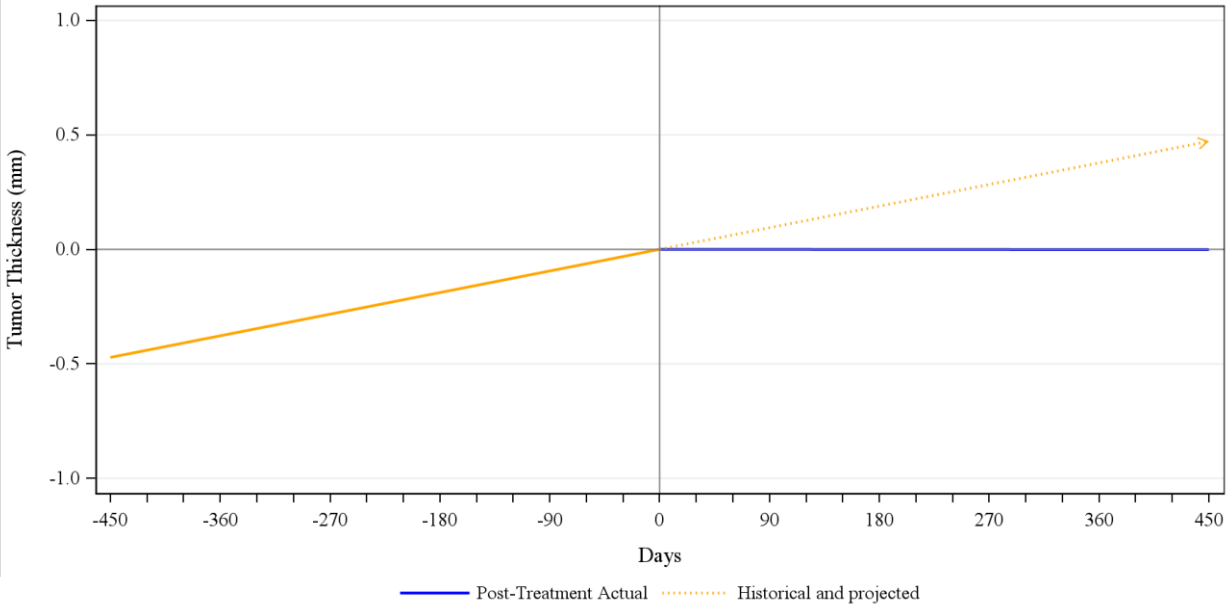
Ph 2 Interim Data Demonstrated Tumor Control Rate of 80%, with 90% of Patients at 12 Months of Follow Up

*A local complete response, or CR, in early-stage choroidal melanoma is described as tumor control and complete arrest of tumor growth by ocular oncologists.

Negative Growth Rate Post-Treatment in Patients with Local Complete Responses*

Successful Treatment with 3 Cycle Regimen in Ph 3 Eligible Tumors with Active Growth Change in Tumor Growth (mm/yr) (n=8)





August 3, 2023, data on file Aura Biosciences
Tumor thickness growth rates/ slopes estimated using Mixed Models for Repeat Measures (random intercept and slope model for Historical and Study periods)

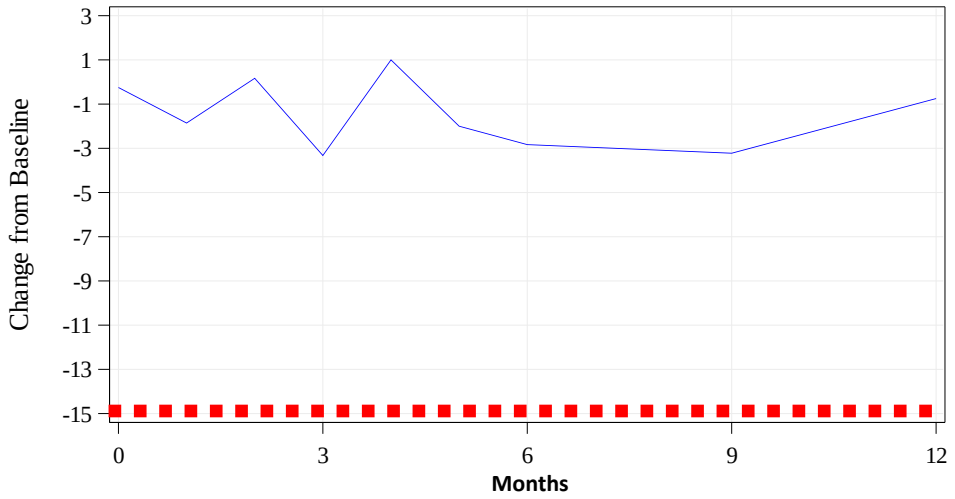
Interim Data Showed Negative Growth Rate Among Responders in Planned Ph 3 Population (P <0.0001)

*A local complete response, or CR, in early-stage choroidal melanoma is described as tumor control and complete arrest of tumor growth by ocular oncologists.

90% Visual Acuity Preservation Despite 80% of These Patients Being at High Risk for Vision Loss

>90% Patients Completed 12 months

Median Change in BCVA in Ph3 Eligible Patients with Therapeutic Regimen (n=10)



Vision acuity loss definition based on ETDRS BCVA letter score (≥ 15 letters from baseline)

Vision Loss (15 letters)

August 3, 2023, data on file Aura Biosciences

Populations	Total Patients (n)	Vision Failures (n)	Vision Preservation Rate
All Dose Cohorts			
All Treated Patients	22	1	96%
Subtherapeutic			
Single dose up to 2 cycles	10	0	100%
Therapeutic Regimens			
3 Cycles (n=11)	11	1	91%
3 Cycles and Ph 3 eligible (n=10)*	10	1	90%

*One subject with circumpapillary tumor that doesn't meet Ph 3 criteria is not included

90% Visual Acuity Preservation Data Supports Potential to be Front Line Therapy for Early-Stage Disease

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Ph 2 Safety Data Supports Potential to be First Line Treatment in Early-Stage Disease

Ongoing Ph 2 Safety Outcomes with SC Administration				
All Treated Subjects (n=22) Drug/Laser Related Adverse Events >5% Subjects*	**Grade I**	**Grade II**	**Grade III**	**Total**
Anterior Chamber Inflammation	18%	0	0	18%
Anterior Chamber Cell	9%	0	0	9%
Eye Pain	9%	0	0	9%

Table presents percentage of subjects with AEs related to bel-sar or laser by severity and overall; subjects with more than 1 AE are counted in the highest severity group
*Treatment-emergent AEs related to bel-sar or laser in 1 patient each or <5% (anisocoria, conjunctival edema, cystoid macular edema, pupillary reflex impaired, retinal pigment epitheliopathy, salivary gland enlargement)

August 3, 2023, data on file Aura Biosciences

Adverse Event	Radiotherapy*	Bel-Sar+
Surgeries secondary to AEs+ (e.g., Cataracts)	**40%+**	0%
Radiation Retinopathy	**40%+**	0%
Neovascular Glaucoma	**10%**	0%
Dry Eye Syndrome	**20%**	0%
Strabismus	**2%+**	0%
Retinal Detachment	**1-2%**	0%
Vision Loss (≥15 letters)	**~70%**	~5%
Serious Adverse Event	**Radiotherapy***	**Bel-Sar+**
Scleral Necrosis	**0-5%**	**0%**
Enucleation/Eye Loss	**10-15%**	**0%**
Severe Vision Loss (≥30 letters) in HRVL**	**~90%**	**0%++**

* Certain data in this presentation are based on a cross-trial comparisons and are not based on any head-to-head clinical trials. Cross-trial comparisons are inherently limited and may suggest misleading similarities or differences. Results of head-to-head comparisons may differ significantly from those set forth herein.
+Related to bel-sar or laser
**73% (16/22) of patients in Ph2 SC trial were at high risk for vision loss

No Posterior Inflammation, No SAEs and No Grade 3 Related Adverse Events

*J. Contemp Brachytherapy. J. 2019 Aug; 11(4): 392–397.; Arch Ophthalmol. 2000;118(9):1219-1228; Curr. Opin. Ophthalmol. 2019 May;30(3):206-214; Eye 2017 Feb;31(2):241-257
**High-Risk Vision Loss (HRVL) are those subjects with tumors <3mm to fovea or optic nerve
Bel-Sar – Belzupacap Sarotalocan; AEs – Adverse Events; SAEs – Serious Adverse Events

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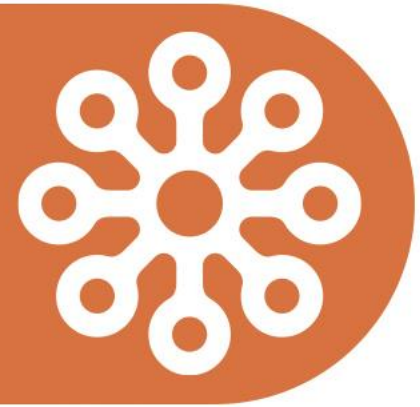
Randomized Controlled Global Ph 3 Trial



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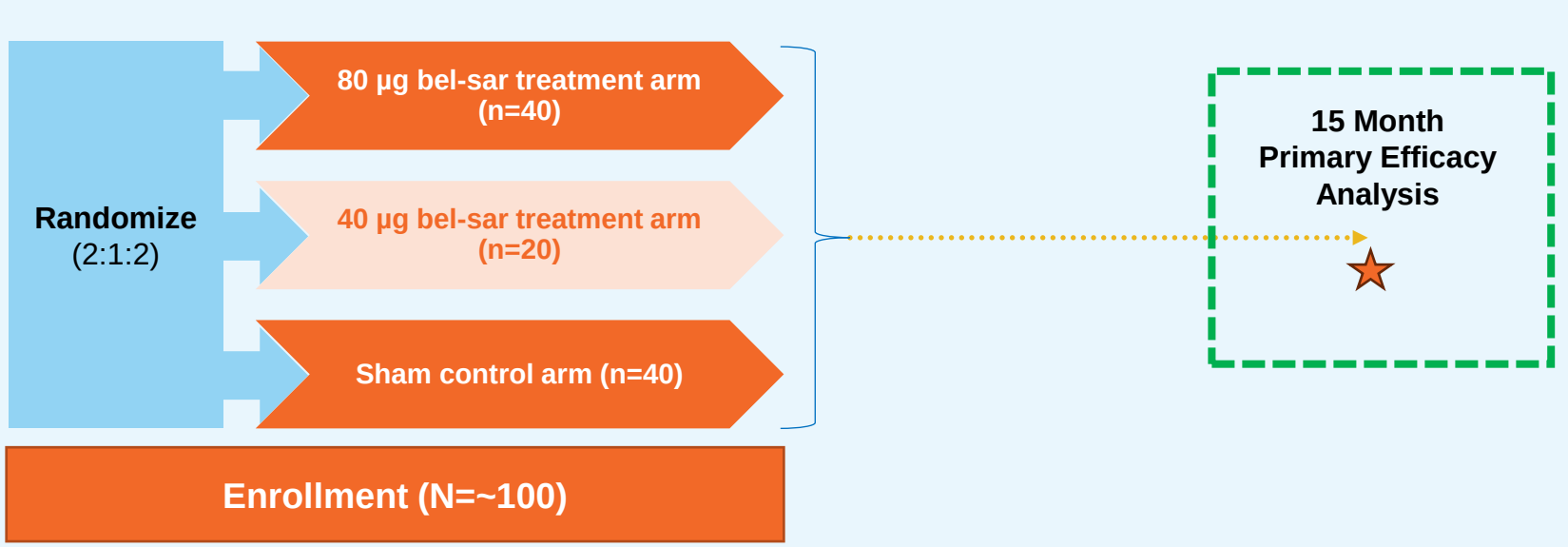
SPA Agreement with FDA Supports Global Ph 3 Trial Design

Fast Track and Orphan Designations



Primary Endpoint

- Time to Tumor Progression

First Key Secondary Endpoint

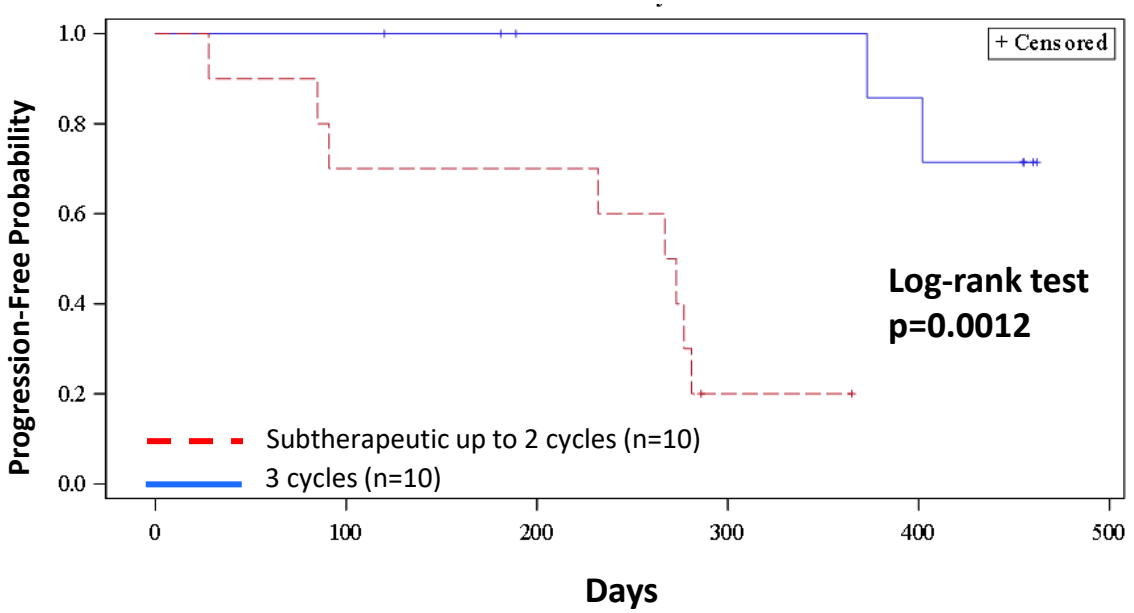
- Time to Composite Endpoint: Tumor Progression or Visual Acuity Failure

An SPA Indicates Concurrence by the FDA that the Design of the Trial can Adequately Support a Regulatory Submission

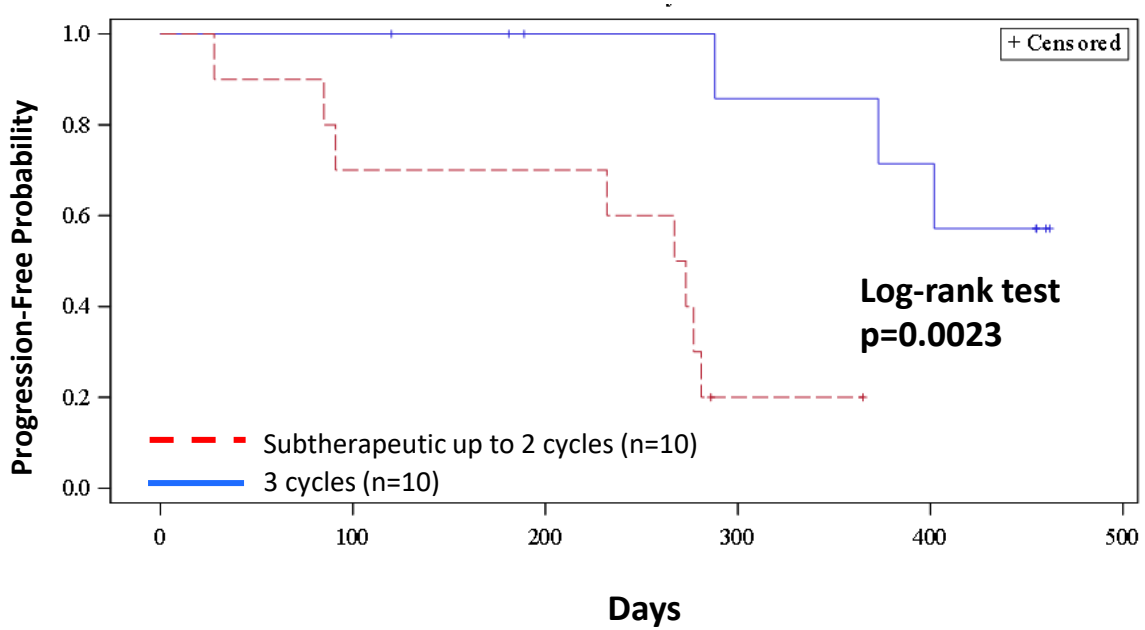
SPA – Special Protocol Assessment; Bel-sar – Belzupacap Sarotalocan

Kaplan-Meier Analysis Simulation of Key Primary & Secondary Endpoint with Ph 2 Data

Time to Tumor Progression



Time to Composite Endpoint



Note: Subjects either had an event or were censored at the last visit. Some subjects had Week 52 visit after 365 days.
Time to Composite Endpoint is defined as time to tumor progression or vision acuity failure, whichever occurs earlier.
Tumor progression is defined as a change from baseline in thickness ≥0.5mm; or in LBD ≥1.5mm confirmed by at least one repeat assessment.
Log-rank test p-value based on unsimulated original KM curves
August 3, 2023 data on file Aura Biosciences
Study duration 12 months. Some patients presented delayed for their final 12-month visit. Any events at the final visit are assigned to the actual time of that visit.

Ph 2 Interim Data Supports Assumptions for the Potential Success of Ph 3 with High Statistical Significance

Choroidal Metastasis

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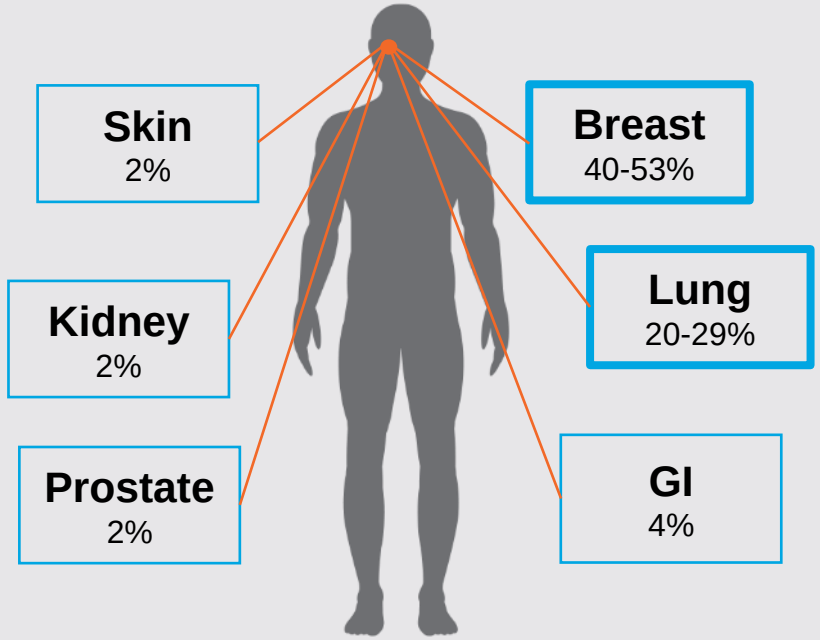
Choroidal Metastasis is a High Unmet Medical Need

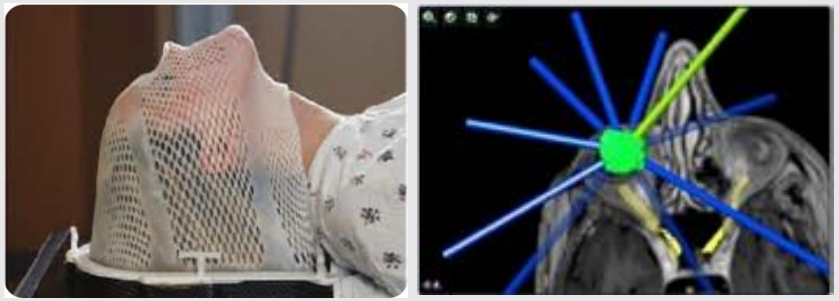
Originate from **Multiple Primary** Cancers
(e.g., Breast and Lung)

20,000/year eyes diagnosed in US

88% with choroidal location
72% unilateral and solitary



Standard of Care is Daily Radiotherapy for 4 Weeks



Vision Loss and Radiation Associated Complications

Choroidal Metastasis Cause Decreased Vision and Decreased Quality of Life in Patients Fighting Metastatic Cancer

Mathis et al. New concepts in choroidal metastasis, *Progress in retinal and eye research* (2019), Cohen, Ocular metastasis, Eye (2014), Shields et al. Survey of 520 eyes with uveal metastases. *Ophthalmology* (1997), Namad et al. Bilateral choroidal metastasis from non-small lung cancer, Case reports in oncological medicine (2014).

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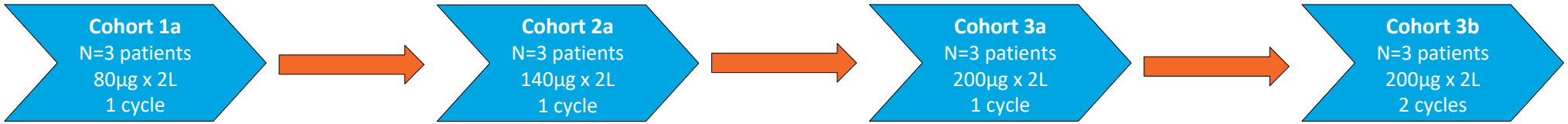
Choroidal Metastasis – Ph 2 Trial Design

Study Design (n=12*)



Study Objectives

- Safety/DLT
- Efficacy
  - Choroidal Tumor Progression
  - Choroidal Tumor Growth rate
  - Vision improvement

Study Population

- Patients with unilateral, unifocal choroidal metastasis
- Breast or Lung Primary
- No changes in concurrent systemic medications planned

Highlights: Primary Endpoint at one-month post-treatment; possibility to see tumor shrinkage; FDA oncology division

*3+3 Design. Each cohort will have a minimum of 3 and a maximum of 6 patients.

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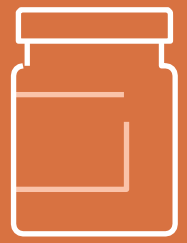
Urologic Oncology



Bel-sar

INN: belzupacap sarotalocan

Target Indications:

Bladder Cancer

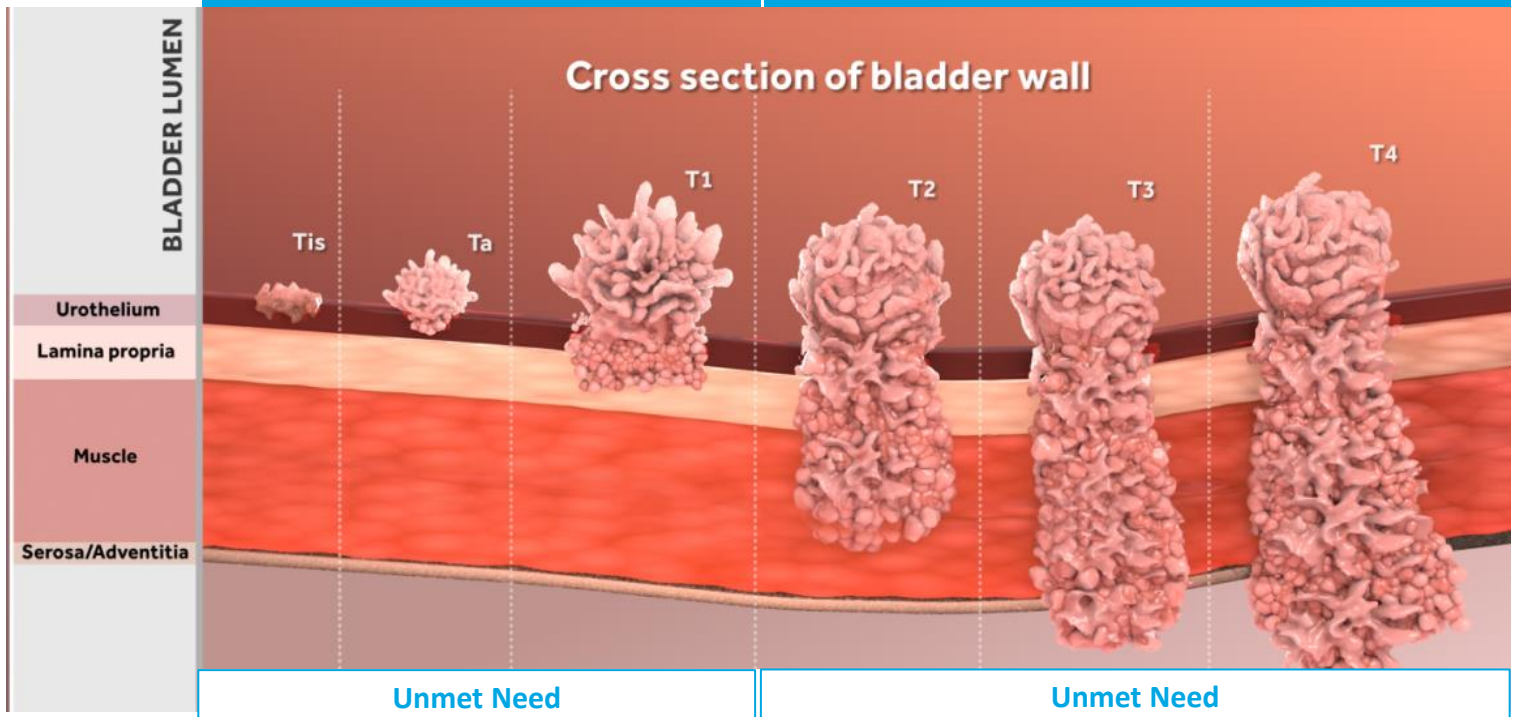
Bladder Cancer is a High Unmet Medical Need

~500,000
New cases/ year globally[1]

61,000
New cases/year in the US[1]

20,000
New cases/year in the US[2]

Non-Muscle Invasive Bladder Cancer	Muscle Invasive Bladder Cancer



Unmet Need	Unmet Need
Recurrence, multiple TURBT surgeries, Progression of Disease, Loss of Bladder/Cystectomy	Progression of Disease, Loss of Bladder/Cystectomy, Metastasis and Survival

1. Putnam & Assoc. Epidemiology Analysis
2. Campbell-Walsh-wein Urology, 2021, 12th edition ; Chapter 137, page 3112

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Bel-Sar has the Potential to be Front Line in Conjunction with TURBT

Illustrative **Current** Bladder Cancer Patient Journey

Presents with Blood in urine → Urologist → Diagnosis and Treatment Plan → TURBT → BCG >6 tx

Adjuvant Therapy → BCG >6 tx

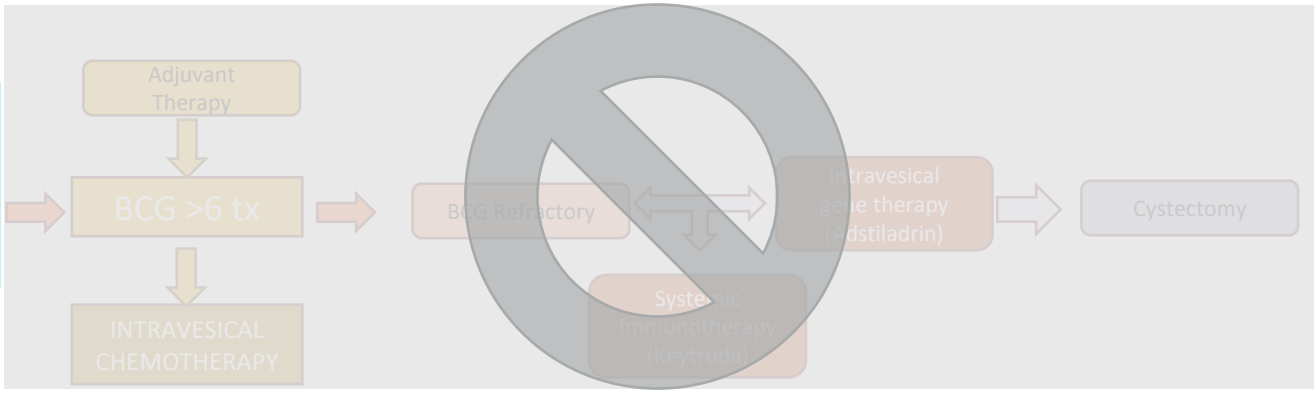
recurrence → INTRAVESICAL CHEMOTHERAPY

BCG >6 tx → BCG Refractory ⟷ Intravesical gene therapy (Adstiladrin) → Cystectomy

BCG Refractory ⟷ Systemic Immunotherapy (Keytruda)

Illustrative **Future** Bladder Cancer Patient Journey

Presents with Blood in urine → Urologist → Diagnosis and Treatment Plan → Bel-sar +/- TURBT



Adding Bel-sar can potentially:

- *Prevent Recurrence after TURBT*
- *Avoid need for Adjuvant Chemotherapy*
- *Avoid need for six cycles of BCG*
- *Increase efficacy of checkpoint inhibitors*
- *Prevent Cystectomy*

BCG – Bacillus Calmette Guerin;
TURBT- transurethral resection of bladder tumor

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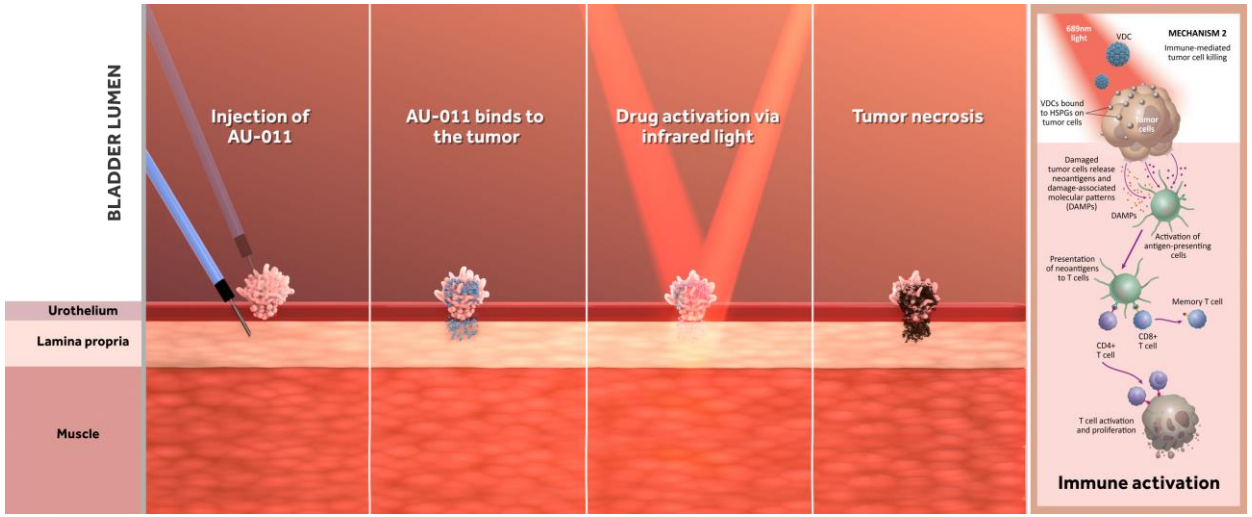
Bel-Sar has a Unique MoA Designed for the Local Treatment

Local Administration and Light Activation with Standard Cystoscope



Treatment Aligned with Current Urologic Oncology Practice

Lasers are commonly used by urologists

Bladder injections are common and simple to perform (e.g., Botox)

Local delivery in the bladder increases tumor drug exposure

Precedent for immune-mediated tumor clearance (BCG & checkpoint inhibitors)

Bel-sar's Local Administration is Aligned with Clinical Practice and has a Unique MoA that may be Complementary to Other Drugs

Bel-sar, AU-011 – Belzupacap Sarotalocan
MoA – Mechanism of Action

Ph 1 Trial Designed to Evaluate Safety, Feasibility and MoA

Study Design and Objectives (n=21)

Part 1 (n=5)

Bel-sar Alone

→ **Completed**

No treatment-related adverse events, serious adverse events or dose-limiting toxicities were seen for the 5 patients

Part 2 (n=16)

Bel-sar +
Focal Light Activation

→ **Ongoing**

Study Objectives

- Safety/DLT
- Feasibility of technique
- Focal distribution of bel-sar
- Focal necrosis
- Markers of immune activation

Study Population

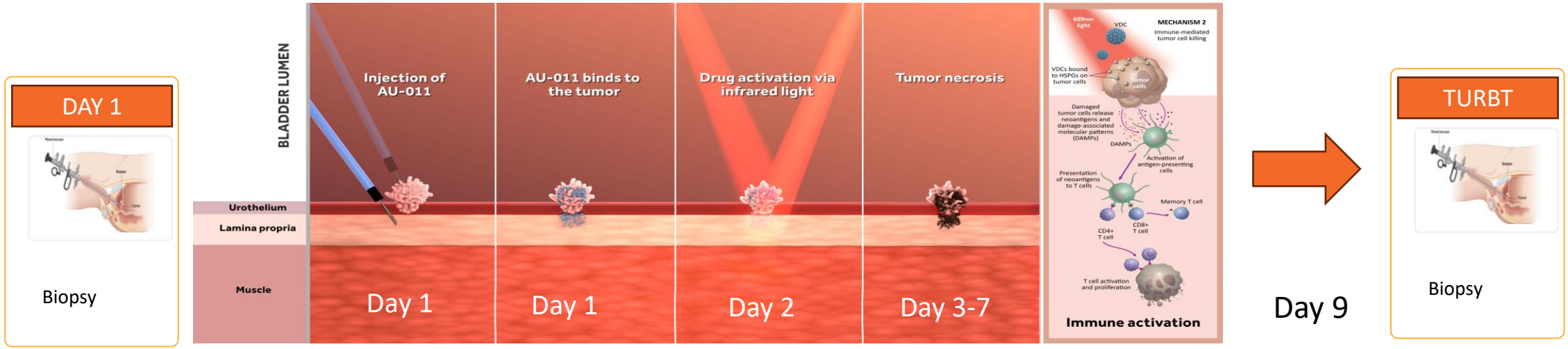
- TURBT and cystectomy patients
- NMIBC and MIBC patients

Ph 1 Data is Anticipated to Support the Future Development of Bel-sar for the Treatment of Both NMIBC and MIBC

Bel-sar – Belzupacap Sarotalocan
MoA – Mechanism of Action
TURBT- transurethral resection of bladder tumor

Clinical Complete Response with Immune Activation after Single Dose Confirmed by Histopathology

Ph 1- Preliminary Data Light Activated Cohort (n=1)



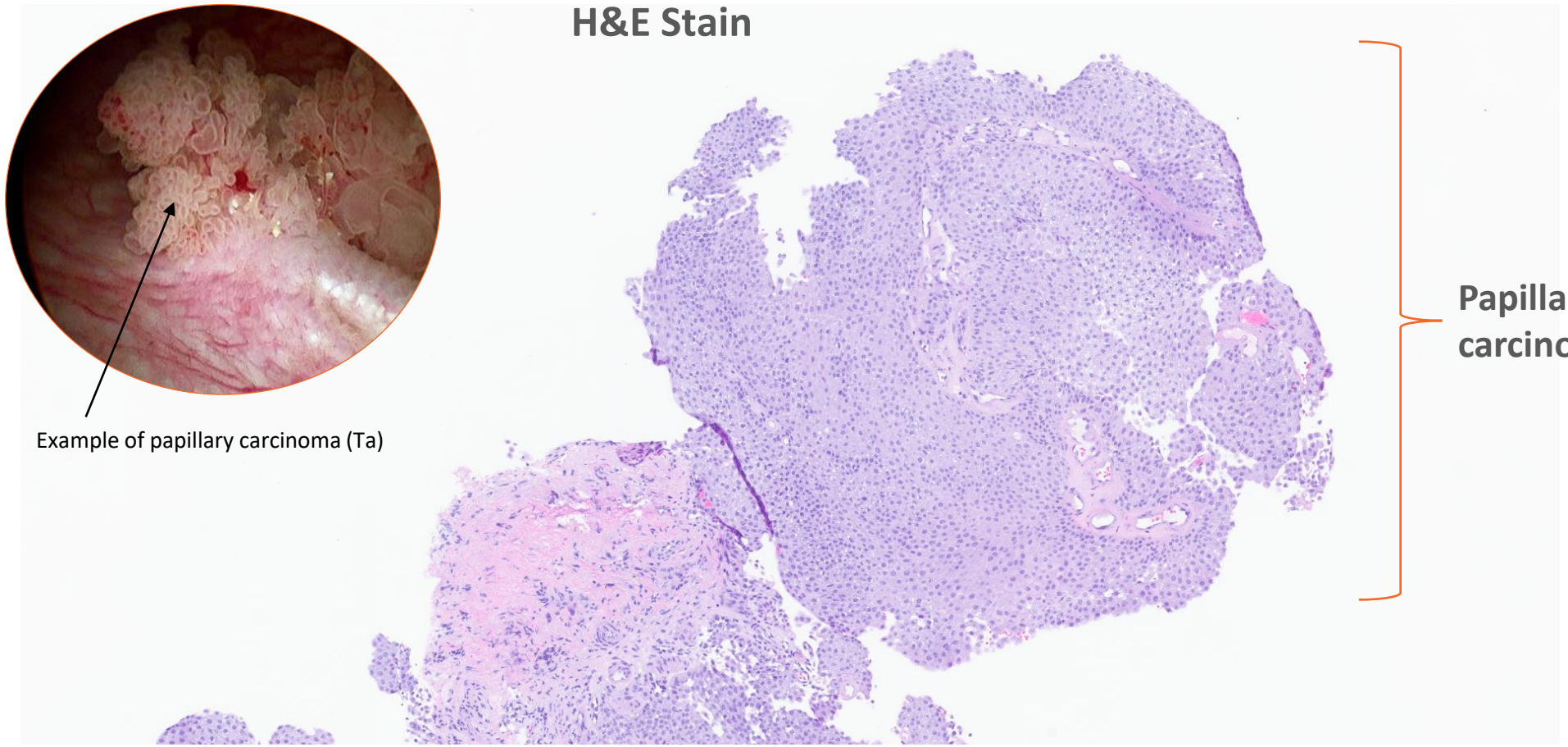
Day 1
Diagnostic biopsy shows non-invasive, low grade urothelial carcinoma
Injection of Bel-sar (100ug) performed within tumor and below tumor
(Aura present w/ Urologist)

Day 2
Urologist performs Light activation with 689nm infrared light (50J/cm^2)
(~5 min duration)
(Aura present w/ Urologist)

Day 9
Urologist performs TURBT in area where tumor used to be present. Biopsy shows denuded urothelial mucosa,
no cancer cells;
focal ulcer and chronic inflammation (eosinophils/lymphocytes)

Bel-sar, AU-011 – Belzupacap Sarotalocan
TURBT- transurethral resection of bladder tumor

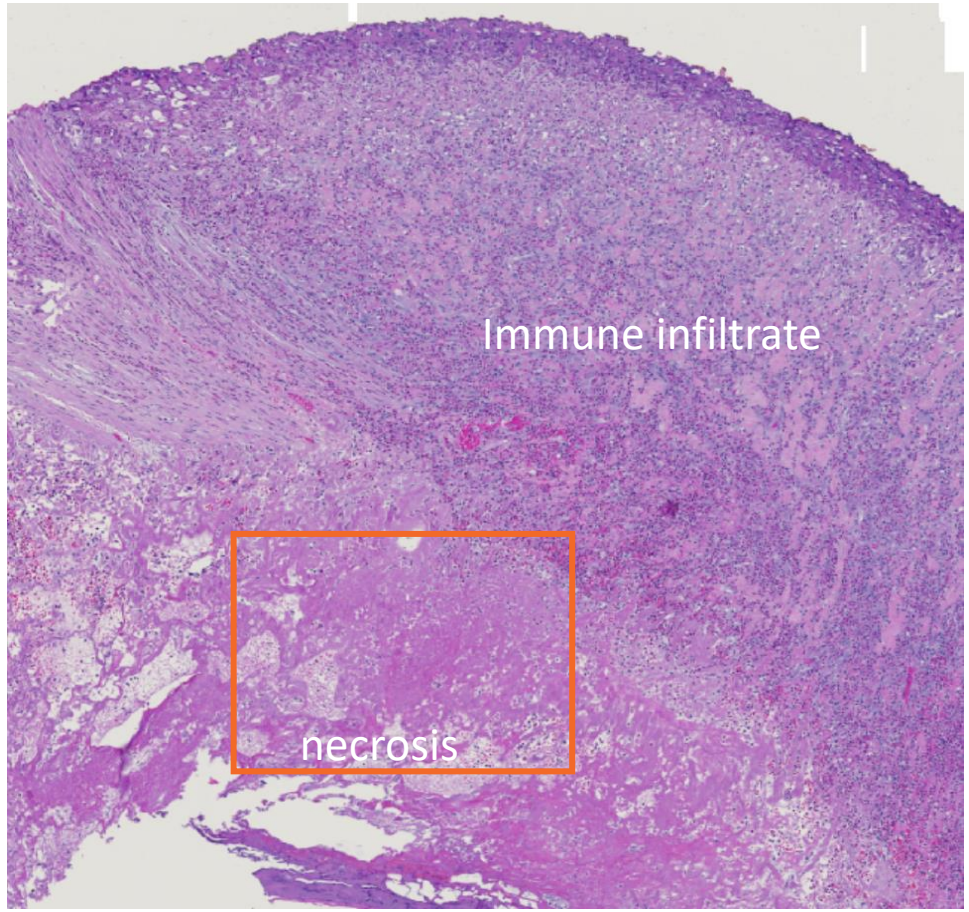
Pre-Treatment Biopsy (Day 1) shows Papillary Urothelial Carcinoma

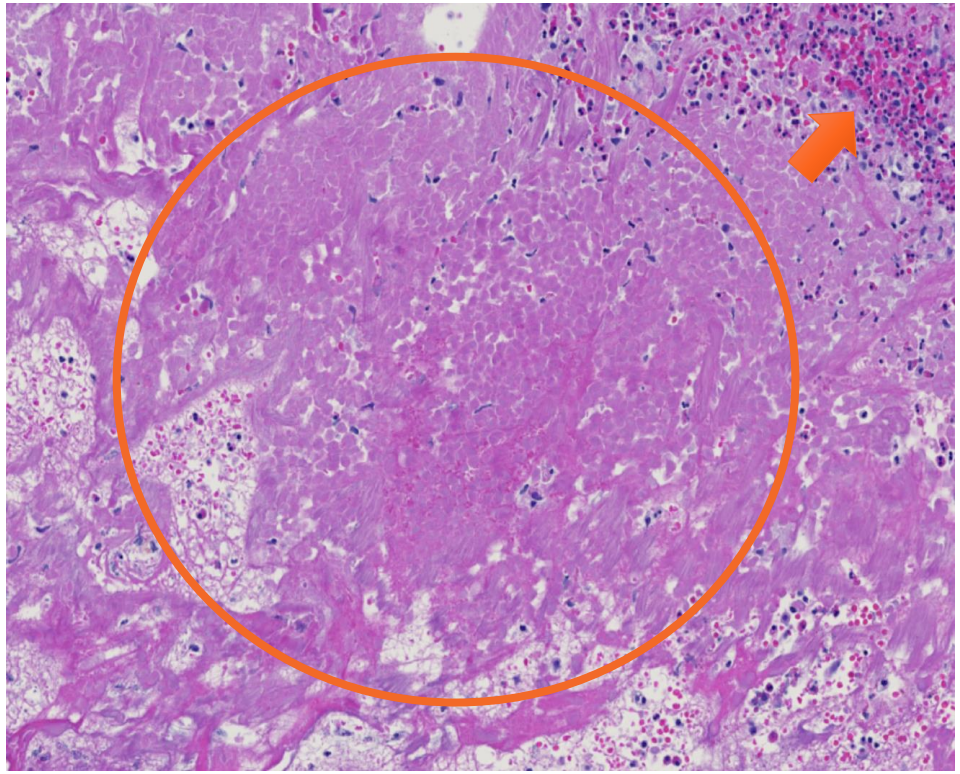


Pre-injection bladder biopsy demonstrating low-grade papillary urothelial carcinoma; non-invasive.

Clinical Complete Response Confirmed by Histopathology after Single Dose of Bel-sar

Disappearance of all cancer cells after treatment and immune activation





Post-treatment TURBT demonstrating necrosis, inflammatory infiltrate, and no residual carcinoma. Circled region shows area of necrosis; arrow indicates edge of inflammatory infiltrate.

Evidence of Complete Response by Absence of Tumor Cells after Single Dose Treatment in First Patient

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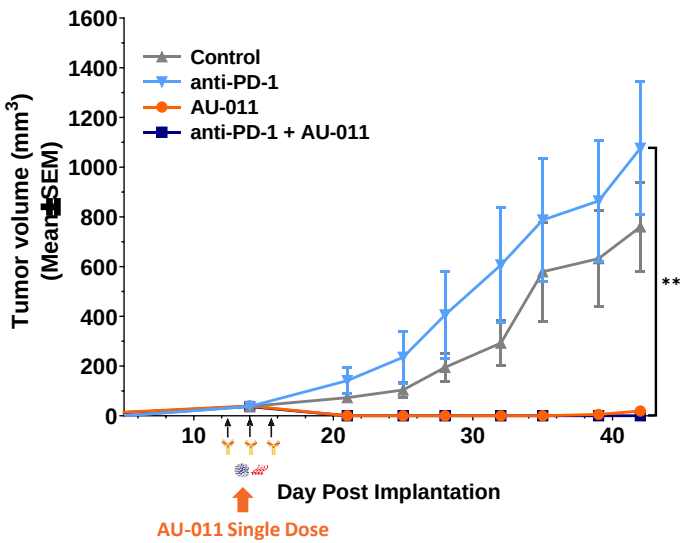
Durable CRs with Single Administration of Bel-sar in Bladder Cancer Model

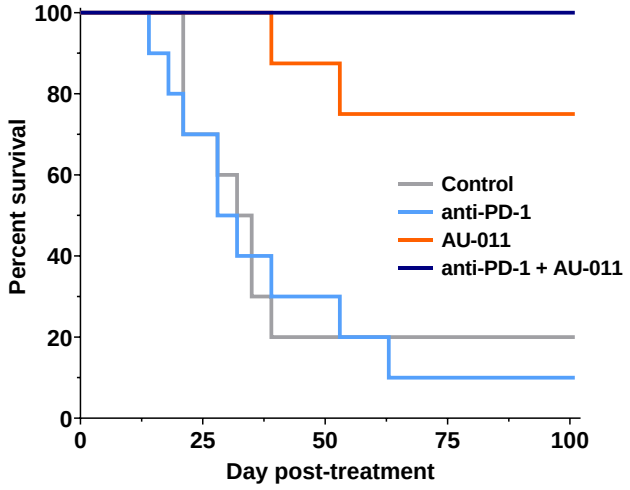
Treatment of Tumor Caused Anti-Tumor Immune Response and Prevented Tumor Growth After Re-Challenge

Tumor Regression

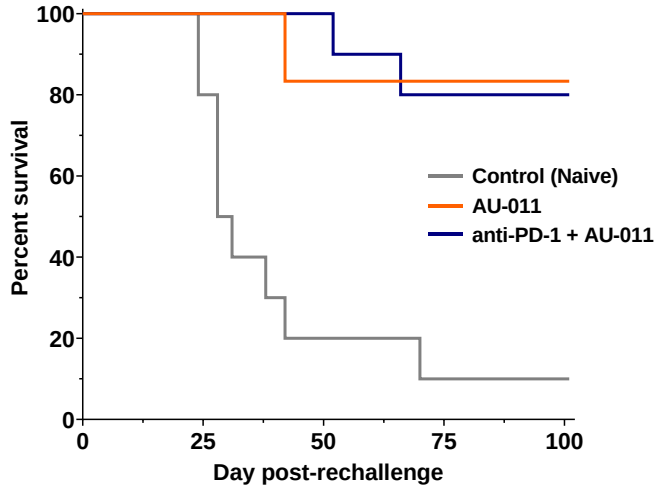


Syngeneic Mouse Tumor Bladder Model (MB49 Model in C57BL/6 Mice) (N=8 -10/group)

Survival



Survival After Re-challenge



Kines et al. Can Immunol Res 9(6):693-706, 2021

Data Demonstrated Robust Nonclinical Activity Supporting Development of Bel-sar as Single Agent and in Combination with Checkpoint Inhibitors

Bel-sar: Belzupacap Sarotalocan; CR: Complete Responses

Strategy & Key Milestones

Aura Biosciences – Developing a Novel Class of Drugs in Oncology

VIRUS LIKE DRUG CONJUGATES (VDCs) FOR THE TREATMENT OF SOLID TUMORS

Ocular Oncology Franchise

- Choroidal Melanoma – Global Ph 3 CoMpass Trial:
  - FPI was Q4 2023
  - Most US sites activated; Trial actively enrolling
  - Special Protocol Assessment (SPA) Agreement with FDA
  - Ph 3 assumptions supported by Ph 2 data
- Choroidal Metastasis – Ph 2 trial planned to initiate in mid-2024
- Second ocular indication potentially doubles market opportunity

Urologic Oncology Franchise

- Clinical complete response in first patient with single dose
- Data supports dual mechanism
- Updated protocol includes both NMIBC and MIBC

Strong Cash Position

- Current cash runway expected to fund operations into 2H 2026

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