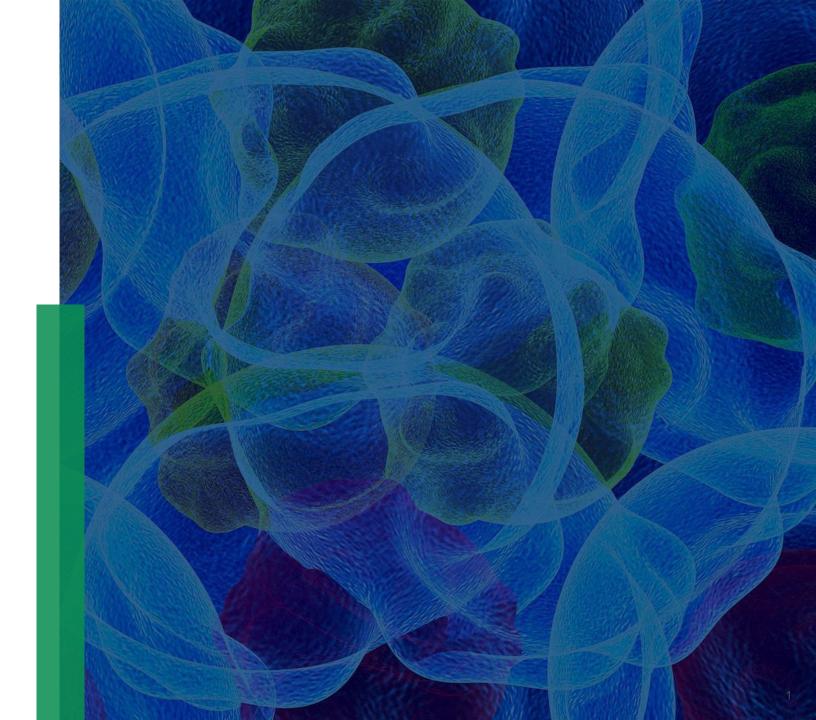


Corporate Presentation

July 2024

NASDAQ: CLRB



Forward-Looking Statements and Disclaimers

This presentation contains forward-looking statements. Such statements are valid only as of today, and we disclaim any obligation to update this information. These statements are only estimates and predictions and are subject to known and unknown risks and uncertainties that may cause actual future experiences and results to differ materially from the statements made. These statements are based on our current beliefs and expectations as to such future outcomes. Factors that might cause such a material difference include our current views with respect to our business strategy, business plan and research and development activities; the progress of our product development programs, including clinical testing and the timing of commencement and results thereof; our projected operating results, including research and development expenses; our ability to continue development plans for iopofosine I 131 (also known as CLR 131 or iopofosine), CLR 1900 series, CLR 2000 series and CLR 12120; our ability to continue development plans for our Phospholipid Drug Conjugates (PDC)™; our ability to maintain orphan drug designation in the U.S. for iopofosine as a therapeutic for the treatment of multiple myeloma, neuroblastoma, osteosarcoma, rhabdomyosarcoma, Ewing's sarcoma and lymphoplasmacytic lymphoma, and the expected benefits of orphan drug status; any disruptions at our sole supplier of iopofosine; our ability to pursue strategic alternatives; our ability to advance our technologies into product candidates; our enhancement and consumption of current resources along with ability to obtain additional funding; our current view regarding general economic and market conditions, including our competitive strengths; uncertainty and economic instability resulting from conflicts, military actions, terrorist attacks, natural disasters, public health crises, including the occurrence of a contagious disease or illness, cyber-attacks and general instability; the future impacts of legislative and regulatory developments in the United States on the pricing and reimbursement of our product candidates; our ability to meet the continued listing standards of Nasdag; assumptions underlying any of the foregoing; any other statements that address events or developments that we intend or believe will or may occur in the future; our ability to receive NDA approval for our iopofosine I 131 program and our ability to commercially manufacture and launch our product candidate if we receive regulatory approval. A complete description of risks and uncertainties related to our business is contained in our periodic reports filed with the Securities and Exchange Commission, including our Form 10-K for the year ended December 31, 2023, and our Form 10-Q for the quarter ended March 31, 2024.

This presentation includes industry and market data that we obtained from industry publications and journals, third-party studies and surveys, internal company studies and surveys, and other publicly available information. Industry publications and surveys generally state that the information contained therein has been obtained from sources believed to be reliable. Although we believe the industry and market data to be reliable as of the date of this presentation, this information could prove to be inaccurate. Industry and market data could be wrong because of the method by which sources obtained their data and because information cannot always be verified with complete certainty due to the limits on the availability and reliability of raw data, the voluntary nature of the data-gathering process, and other limitations and uncertainties. In addition, we do not know all of the assumptions that were used in preparing the forecasts from the sources relied upon or cited therein.



Cellectar: Overview

Discovering and Developing the Next Generation of Drug Conjugates

- Proprietary phospholipid ether drug conjugate (PDC) platform with the observed ability to deliver a broad array of therapeutic modalities to target cancers
- Lead Phospholipid Radioconjugate (PRC), iopofosine I 131 exceeded primary endpoint in Waldenstrom's macroglobulinemia (WM) CLOVER-WaM pivotal study
- Observed iopofosine I 131 clinical activity in hematologic malignancies and in tumors located across the blood-brain barrier
- The only radiotherapeutic with "off the shelf" global distribution; logistics provide secure and redundant supply to outpatient setting; production designed to scale with demand
- Completed warrant exercise for ~\$19.4M with potential to raise up to an additional \$73.3M in milestone-based funding

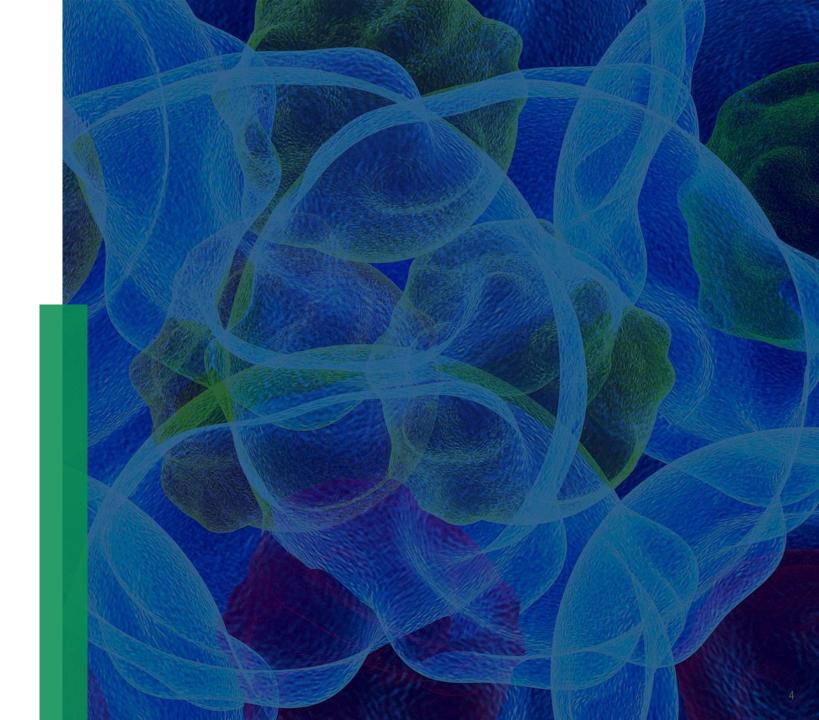
CLOVER-Wall Pivotal Study Data Supports Planned Q4 2024 NDA Submission





Phospholipid Drug Conjugate (PDC)

Platform & Pipeline

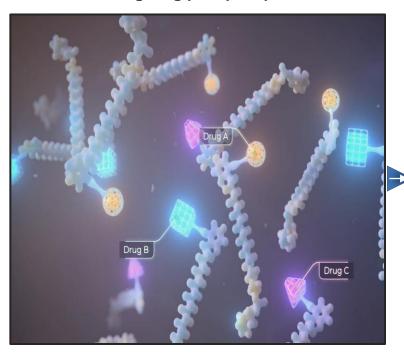




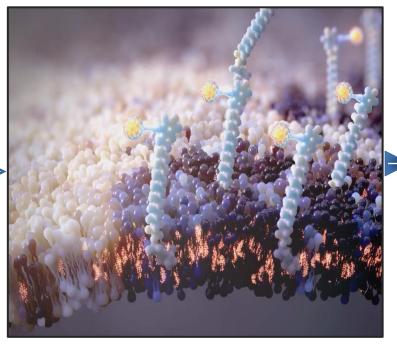
Phospholipid Drug Conjugate (PDC) Platform: MOA

Universal Targeting with Diverse Payloads

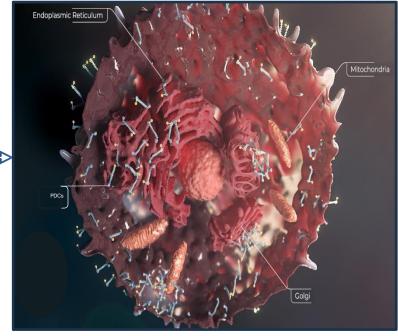
(1) PDC containing desired payload with tumor-targeting phospholipid ether



(2) Specific targeting of lipid raft on cancer cell membrane



(3) Intercellular delivery and release of payload by transmembrane flipping of lipid raft



Profile	Diverse Payload	Pan-cancer Targeting	Cancer specific Target	Rapid Uptake	CNS Penetration	Cytoplasmic Entry
Phospholipid Drug Conjugate ¹ (PDC)	√	√	✓	√	√	✓



PDC Platform: Pipeline

MOA - Therapeutic Franchises

Franchise Payloads

Radioconjugate (PRC)

Cytotoxic Molecule (PCC)

Biologics (PPC)

Nucleic Acid (POC)

Conjugates

Radioconjugate

- · Targeted delivery of any radioisotope
- Alpha and beta emitters
- lopofosine I 131 in a pivotal study

Small-molecule Conjugates

- Observed in vivo safety and efficacy in multiple animal models
- · Pico and nanomolar activity

Peptide and Nanobody Conjugates

 Targeting intracellular pathways that cannot be targeted with small molecules

Oligo Conjugates

 Intracellular delivery of nucleic acids providing knockdown or knock-in gene control in cancer cells

MOA

- Beta emitter (131 I, 177 Lu, 90 Y, 67 Cu, etc.)
- Alpha emitter (211At, 225Ac, 223Ra, 213Bi, etc.)
- Additional isotopes (¹⁵³Gd, ⁶⁷Ga, Auger, etc.)
- PLK-1
- Seco-duba
- MMAF
- Collaboration undisclosed target
- Ribosomal peptide
- · Protein inhibitors
- · Collaboration undisclosed target
- RNAi-/siRNA
- mRNA
- cDNA
- Collaboration undisclosed target

Platform Enables Value Creation Across a Broad Range of Therapeutic Modalities



PDC Platform: Expected Pipeline Milestones 2024-2025

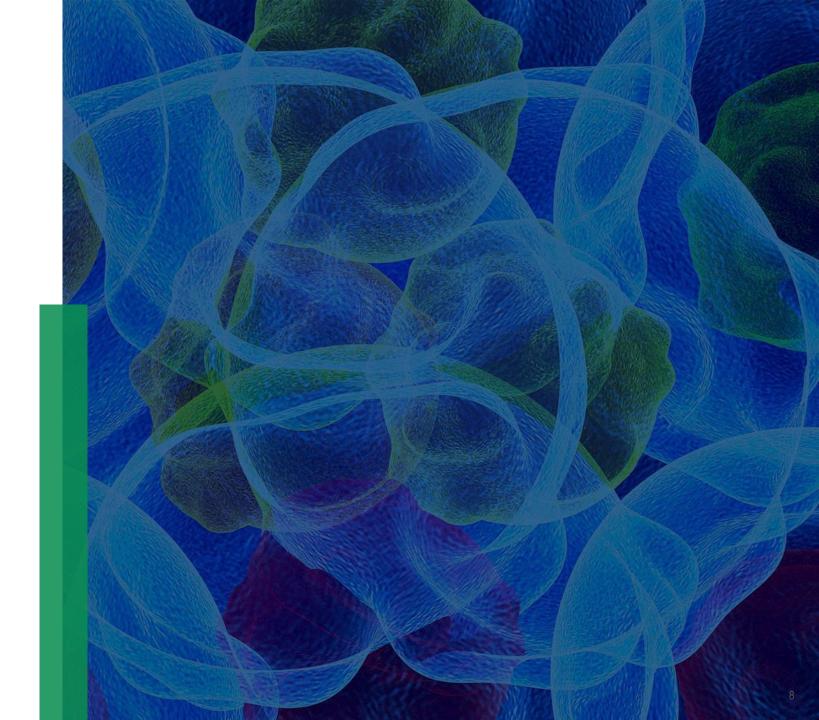
		202	4	2025	
		1H	2H	1H	2Н
lanafacina	Waldenstrom's macroglobulinemia ²	Top Line Data - Jan Updated Q2	NDA Submission		Planned Launch
lopofosine I 131	B-cell Malignancies MM, pCNSL		Ph 2a Enrollment Completed	Initiate Ph 2b	
β-emitting radioconjugate	Pediatric pHGG	Commence Enrollment	Ph 1b Interim Assessment		Ph 1b Trial Results
	Mycosis fungoides		Ph1 In	itiation	
CLR 121225 α-emitting radioconjugate	Solid Tumor	IND Enabling Studies	IND Filing	Ph 1 Initiation	
PRC (isotope TBD)	Discovery		Development Candidate Identified		
Early Pipeline	Discovery		Development Candidate Identified		
Manufacturing	lopofosine I 131/ CLR 121225		Establish lopofosine EU Manufacturing	CLR 121225 GMP Supply	





PRC Franchise

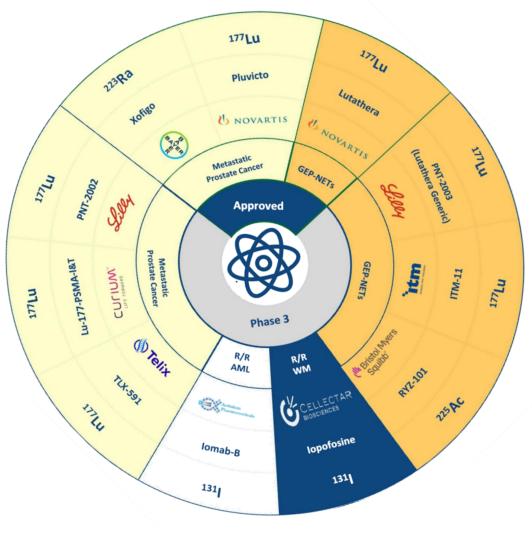
Radioconjugate Competitive Landscape





Radioconjugate Competitive Landscape: Approved & Late-Stage Programs

Focus - Metastatic Prostate Cancer (mPC) & Gastroenteropancreatic Neuroendocrine Tumor (GEP-NET)



- 3 approved products
 - 2 mPC
 - 1 GEP-NET
- 8 programs in pivotal studies
 - 3 mPC
 - 3 GEP-NET
 - 1 AML (hospital in-patient care)
 - 1 WM (out-patient care)

Rayze Bio Revenue Model (per JP Morgan 2023 report)

- 5,400 U.S. treatable patients (GEP-NET)
- \$250,000/prescription
- \$670M peak sales gross revenue (45% U.S. market share)

Significant Product Development and Commercialization Opportunity Exists in Hematologic and Solid Tumor Markets



GEP-NETs

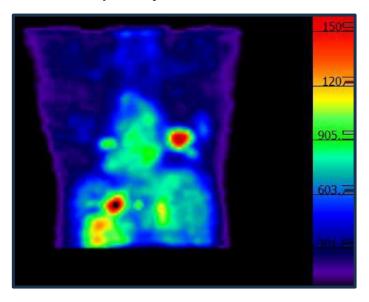
Radioconjugate Competitive Landscape: PRC Unique Attributes

Universal Targeting with Diverse Isotopes Provides Advantages Compared to RLTs

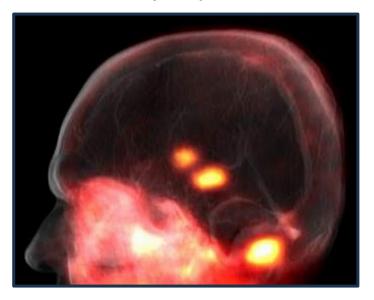
(1) PRC provide preferential distribution and uptake



(2) Significant accumulation of isotope within the primary tumor and metastases



(3) Targeting cancer even in sanctuary compartments



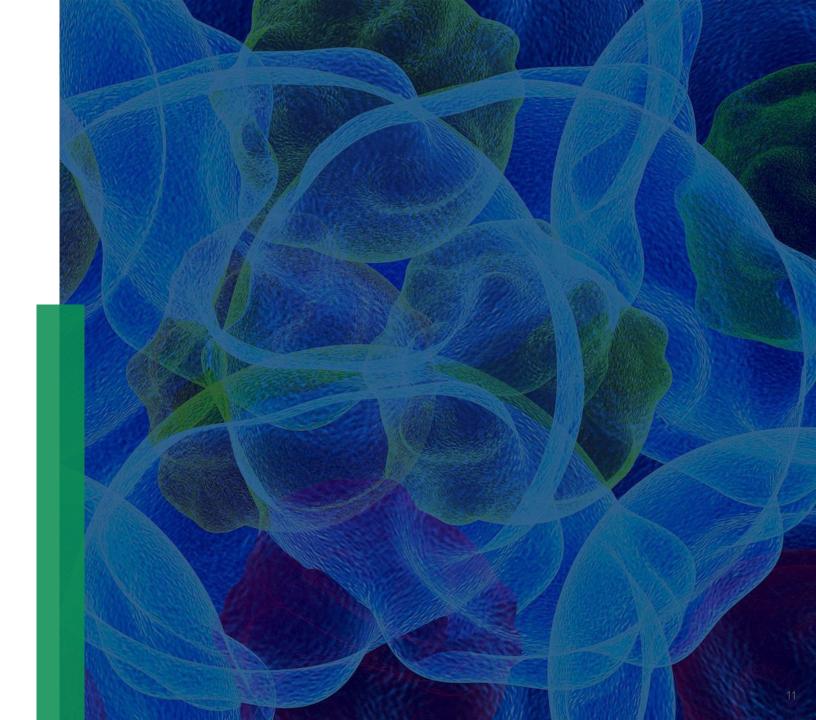
Profile	α, β, and Auger	Size of Molecule	Tissue/Tumor Penetration	Stability	Clearance	Resistance Development	Out-patient/ No Isolation	Production Costs
Phospholipid Radioconjugate (PRC)								
Radioligand Therapy (RLT)		•	0			_	•	•





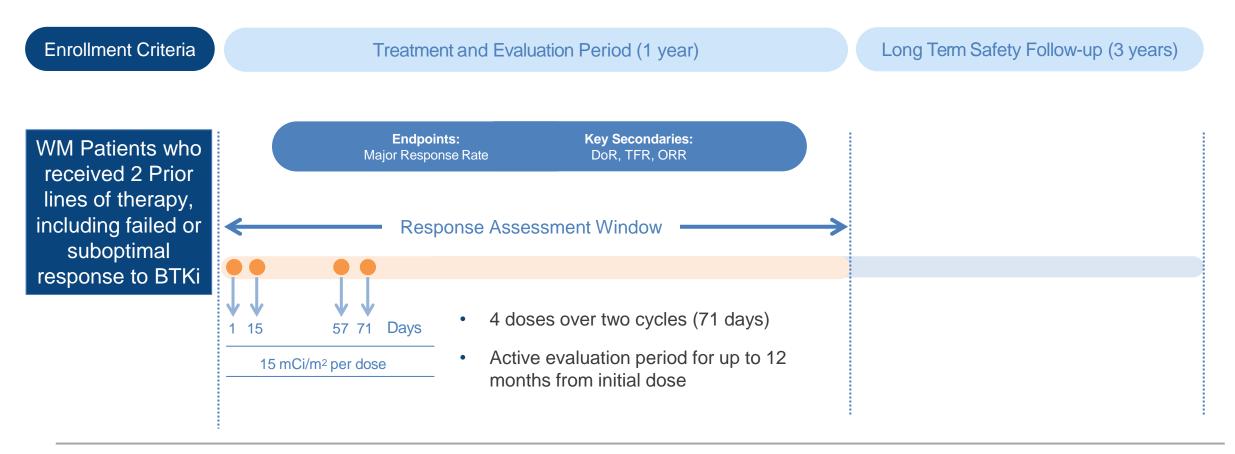
PRC Franchise

Waldenstrom's macroglobulinemia lopofosine I 131 Clinical





FDA Agreed-Upon Design for Approval; Single Arm Registration Study Fully Enrolled



MRR Primary Endpoint of ≥ 20% Satisfies Statistical Threshold³



Patient Characteristics Data Cut-off May 30, 2024

Patient Characteristics	;	Patient Characteristics		
mITT population, n 55		Median Prior Lines of Therapy, n (range)	4 (2-14)	
Median age, years (range)	70 (50-88)	Prior Treatment/Refractory n (%)		
Sex, n (%)				
Male	41 (74.5)	BTKi	39 (71) / 26 (66.7)	
Female	14 (25.5)	Rituximab	50 (91) / 30 (60)	
IPSSWM score n (%)		Chemotherapy	46 (84) / 26 (56.5)	
Low	24 (43.6)	Onomorrorapy	10 (01) / 20 (00.0)	
Medium	16 (29.1)	BTKi & Rituximab (Dual Refractory)	34 (62) / 22 (65)	
High	14 (25.5)	BTKi, Rituximab & Chemo (Triple	28 (51) / 15 (54)	
Median IgM, mdl (range)	2304 (323 – 7400)	Refractory)	20 (01) / 10 (01)	
Extramedullary Volume, mm ³ (range)	2135 (205 – 17185)	Genotype (%)		
Bone Marrow Burden at Baseline, n (%) 50		MYD88 WT/Mut (n=55)	16 (29) / 39 (71)	
< 20%	26 (47.3)	min 2 do 11 1/mat (in do)	(=0) / /	
20 – 50%	20 – 50% 13 (23.6)		39 (89) / 5 (11)	
> 50%	11 (20)	P53 WT/Mut (n=42)	37 (88) / 5 (12)	



High Rate of Responses Across All Patients and Sub-populations

mITT Patients ORR = 80% MRR = 56.4% CR/VGPR* = 7.3%

Sub-populations	MYD88-wt	Post-BTKi	P53 Mutated	Triple-refractory	Dual-refractory
ORR	81%	72%	80%	54%	65%

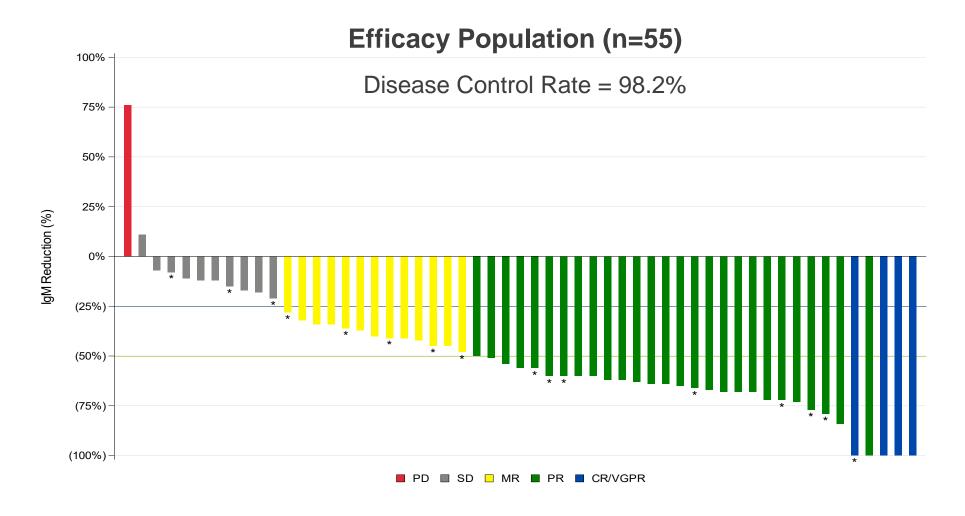
Iopofosine I 131: Potential to be the Standard-of-Care Therapy in r/r WM

- High response rate in BTKi pretreated and BTKi refractory population
- High response rate in patients with no available treatment options
- No features resulting in refractoriness to iopofosine identified

MRR of 56.4% (95% CI, 0.42 to 0.67); Significantly Exceeds 20% Primary Endpoint



Best Serum IgM Response by Patient

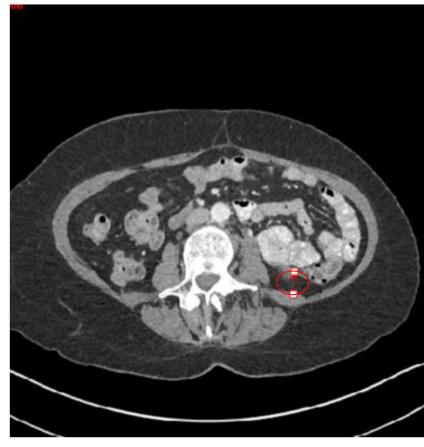




Activity in Patients with Extramedullary Disease







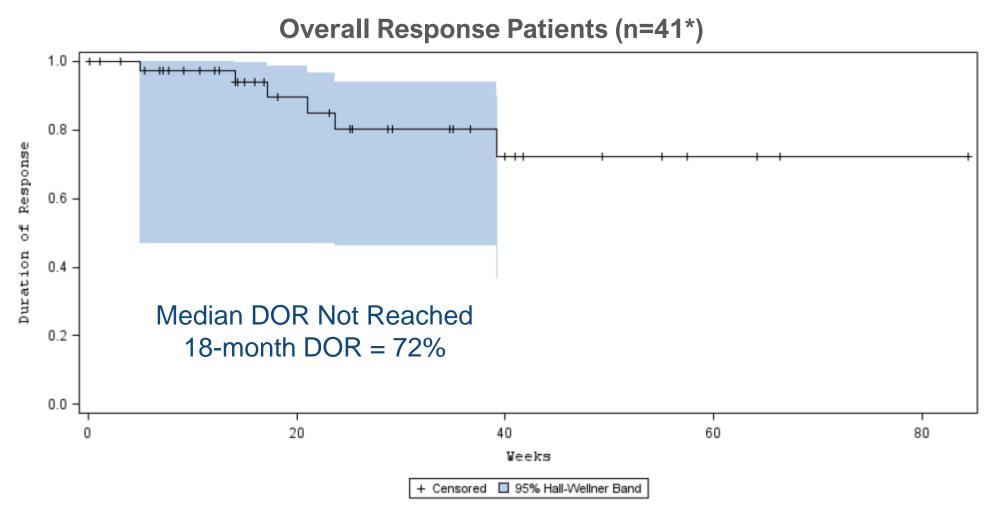
Day 1 Tumor Size 660mm²

Day 28 Tumor Size 160mm²

Day 57 Tumor Size 0mm²



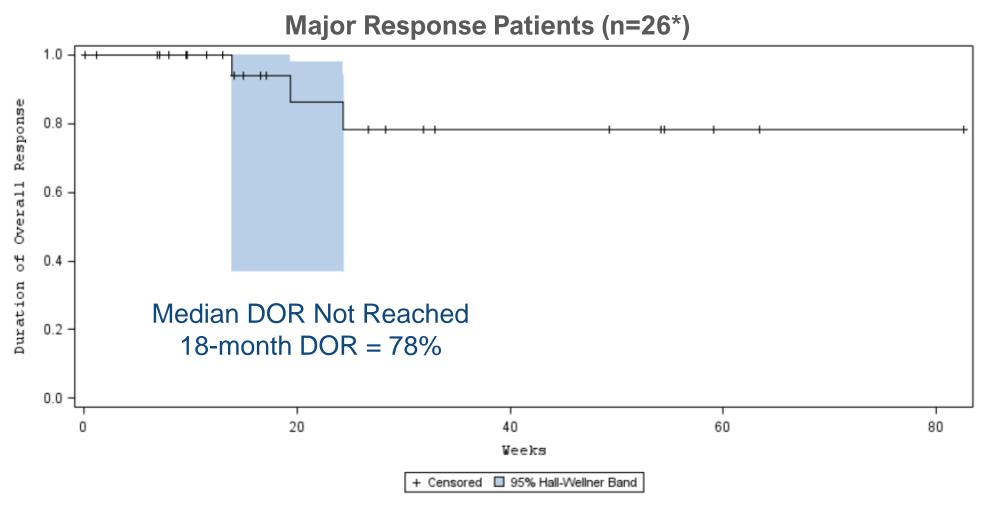
Duration of Response (DOR) Kaplan-Meier Plot



Sustained Clinically Meaningful Responses Observed in Highly Refractory Patient Population



Duration of Response Kaplan-Meier Plot

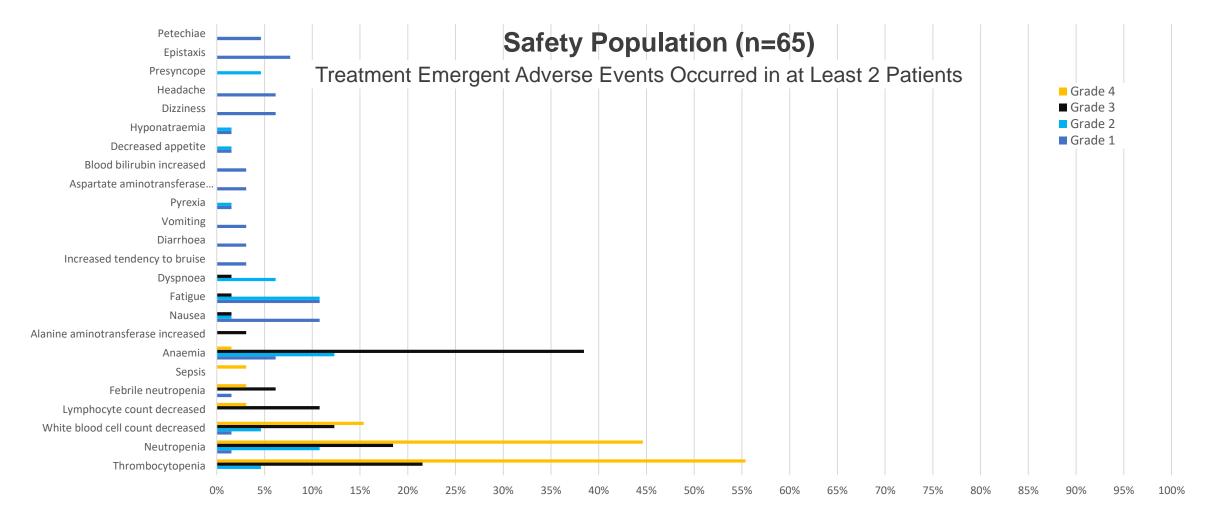


Highly Significant Duration of Benefit Observed in Patients Achieving Major Responses



Iopofosine I 131 Clinical: Global CLOVER-WaM Pivotal Study Safety Results

Observed Cytopenias Consistent with Treatment of Hematologic Malignancies



Safety Profile Confirmed Clinically Negligible Off-Target Effect; Hematologic Toxicity Predictable and Manageable



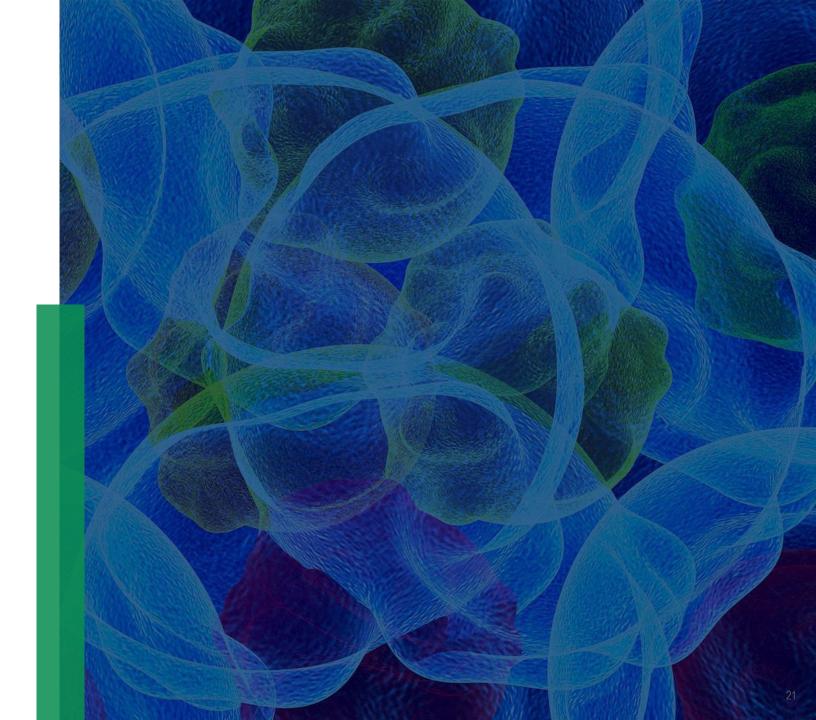
- The first and largest WM post-second-line study in a highly refractory patient population, including patients refractory to all available treatment categories
- 80% ORR, 56.4% MRR, 7.3% CR/VGPR at data cutoff achieved for the entire mITT population
- Lower boundary of MRR 95% CI, 0.42 to 0.67, is >2x higher than regulatory statistical hurdle of 20%
- Comparable rates of ORR observed across all genomic and clinical cohorts, including dual and triple-class refractory patients
- Responses were durable, with median DOR not reached; 18-month DOR of 78% in MRR patients and 72% in ORR patients
- Safety profile was consistent with selective targeting of tumor sites and clinically negligible off-target effect outside the hematologic system
- Four-dose fixed course of treatment provided quality of life advantage vs. current therapeutic options





PRC Franchise

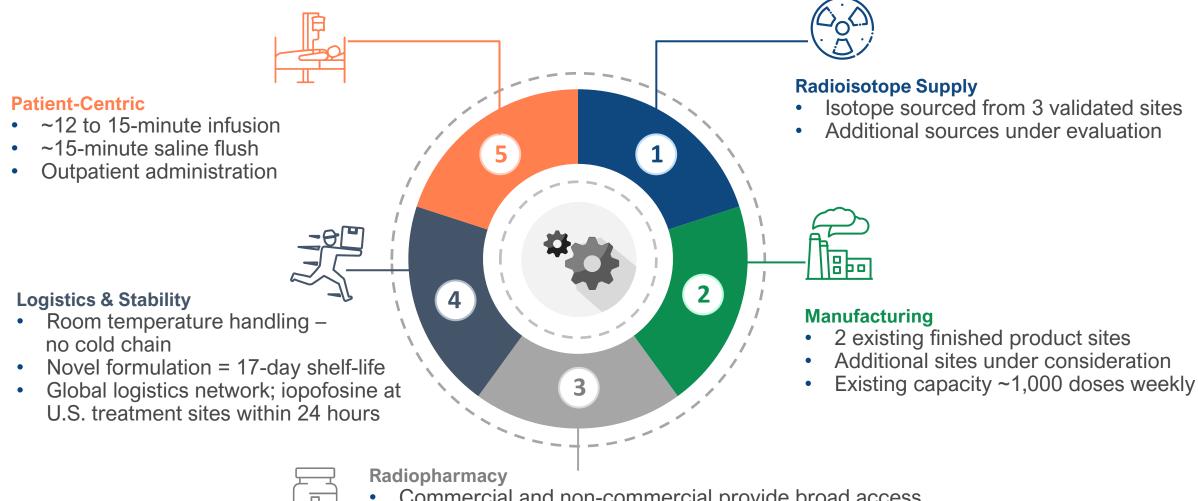
Waldenstrom's macroglobulinemia lopofosine I 131 Commercial





Iopofosine I 131 Commercial: Supply, Manufacturing and Logistics

Convenient Patient-Centric Treatment with Pipeline Redundancy

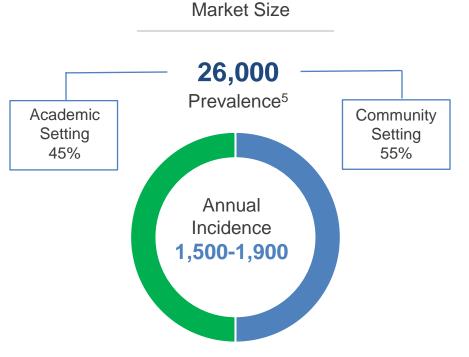


- Commercial and non-commercial provide broad access
- Service to areas of high WM patient concentration
- lopofosine is ready to use; no onsite compounding



Iopofosine I 131 Commercial: U.S. WM Market Opportunity

Concentrated, Prevalent Patient Population with High Unmet Clinical Need



Patients are concentrated geographically in large community and academic accounts⁶

~80% of WM patients located in 15 states⁷

Patient Treatment Journey

81% of patients under care in the last year are currently receiving active treatment⁶

~80% of patients will receive 3rd line treatment⁶

~50% of 3rd line patients not receiving treatment likely to consider new treatment options⁶

Unmet Need - No Approved Treatments

4-12% Major Response Rates (MRR) RWD beyond 2nd line therapy⁸

0% CRs reported with single-agent BTKi therapy¹

Continuous therapy

may increase non-compliance, toxicity and financial burden



Significant Opportunity to Improve and Expand Treatment in a Substantial, Concentrated WM Market

Iopofosine I 131 Commercial: States and Community Accounts

WM Claims Demonstrate Concentrated Market

Top 10 States Contain ~60% of All WM Patients

State	Patients
Florida	3,317
California	2,133
New York	1,981
Ohio	1,516
Massachusetts	1,413
Michigan	1,068
Pennsylvania	1,064
Texas	988
Arizona	842
Minnesota	798

Examples of Community Practices and Networks

	~Patients
ON are	2,694
AMERICAN ONCOLOGY NETWORK, LLC	600
FLORIDA CANCER S P E C I A L I S T S & Research Institute	1,000

Go-To-Market Segmentation Strategy Will Focus Effort on Prioritized Accounts

Iopofosine I 131 Commercial: U.S. WM Market ~\$2.1B9

Market Opportunities to Capture Patient Volume in r/r Market Currently Valued at ~\$1.05B

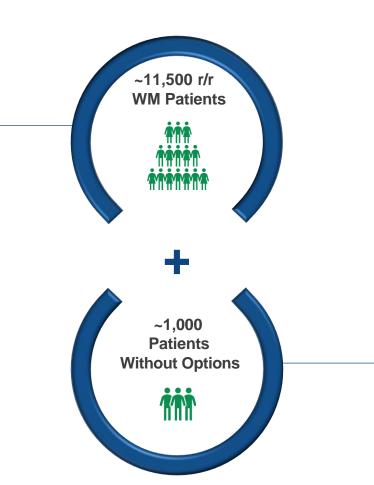


Existing Relapsed Refractory Market

~50% of patients are retreated with the same or similar treatment from prior lines of therapy

>60% of therapies utilized are not FDA-approved and cannot be promoted⁹

~4,700 patients in 3rd line or greater5



2

3L+ Patients not on Active Tx, After 2 Prior Lines of Therapy

~1,000 patients have exhausted the prevalent treatment options by 3L⁵

Patients remain either ineligible or intolerant to current market treatments

A uniquely positioned patient population with a significant unmet need is waiting for a new option

Increases 3rd line + patient pool to ~5,700

Iopofosine's Novel MOA, Clinical Benefit, and Fixed Therapy Showcase a Meaningful Treatment Option for r/r Patients



Iopofosine I 131 Commercial: U.S. WM Shares By Line of Therapy

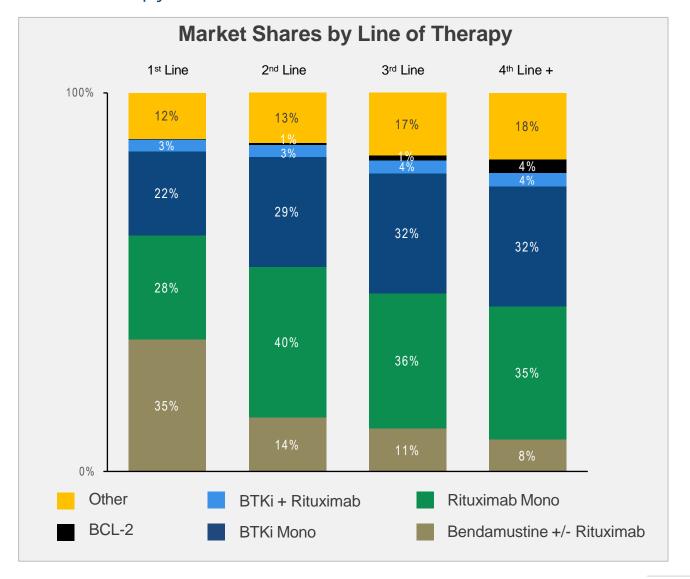
No Established Standard of Care Across All Lines of Therapy⁷

>60% Non-FDA approved drug share across all lines of therapy

52% 3rd line BTKi patients received a BTKi in 2nd line

1-4% BCL-2 (venetoclax) inhibitor utilization across all lines of treatment

Nearly 50% of Patients in 3rd
Line or Greater Setting Have
Been Re-treated After Prior
Exposure to That Same Therapy





Iopofosine I 131 Commercial: U.S. WM 3L+ Therapy Details

Patients Often Retry Prior Therapies Due to a Lack of Options, Despite Suboptimal Outcomes

	FDA Approved	3L+ Market Share	3L+ Patient Counts	Market Characteristics
Bendamustine +/- Rituximab	×	10%	478	 ~40% of pts. with prior exposure to BR/R Mono CANNOT PROMOTE
Rituximab Mono	×	35%	1,666	 ~55% of pts retry after prior exposure CANNOT PROMOTE
BTKi Mono Ibrutinib, zanubrutinib	✓	32%	1,486	 Continuous therapy - unobservable compliance Potential Grade 3 AEs (Atrial Fibrillation) ~50% of pts. retry after prior exposure LIMITED PROMOTION
BTKi + Rituximab	\checkmark	4%	169	~80% of pts. with prior BTKi exposureLIMITED PROMOTION
BCL-2 (venetoclax)	×	2%	104	Unapproved, lacks robust dataCANNOT PROMOTE
Other	×	17%	798	 Contains numerous, unapproved chemo/IO combinations CANNOT PROMOTE

Iopofosine Advantage with Potential FDA Approval

56.4% Major Response Rate

80% Overall Response Rate

Median DOR not reached at 18 months = 78% (for Major Response patients)

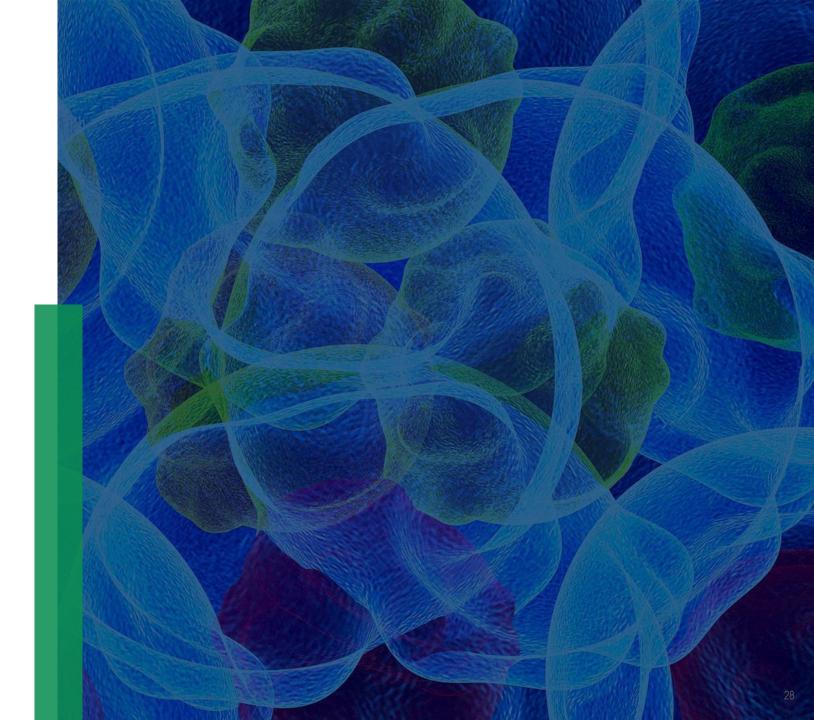
- Can Actively Promote
- Responses regardless of patient characteristics
- Hematologic side effects are predictable and manageable
- Fixed course of therapy

Iopofosine Share of Voice Leadership May Quickly Capture
3rd Line+ Patient Share Based Upon Unmet Need and Novel Product Profile



PRC Franchise

Hematologic and Solid Tumors Iopofosine I 131 Beyond WM





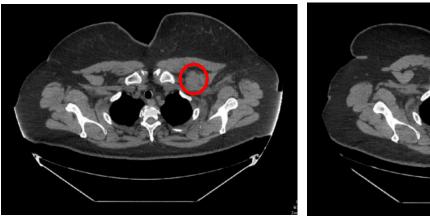
Iopofosine I 131 Beyond WM: Additional Activity

Refractory Primary CNS Lymphoma



Complete Response

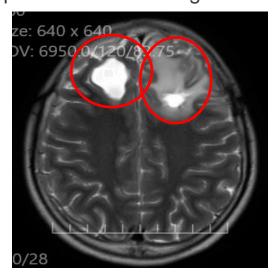
Refractory Diffuse Large B-cell Lymphoma



30% ORR with 10% CRR

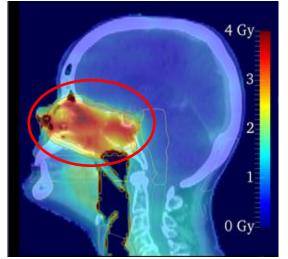
HEMATOLOGIC

SOLID TUMOR Relapsed Pediatric High-Grade Glioma



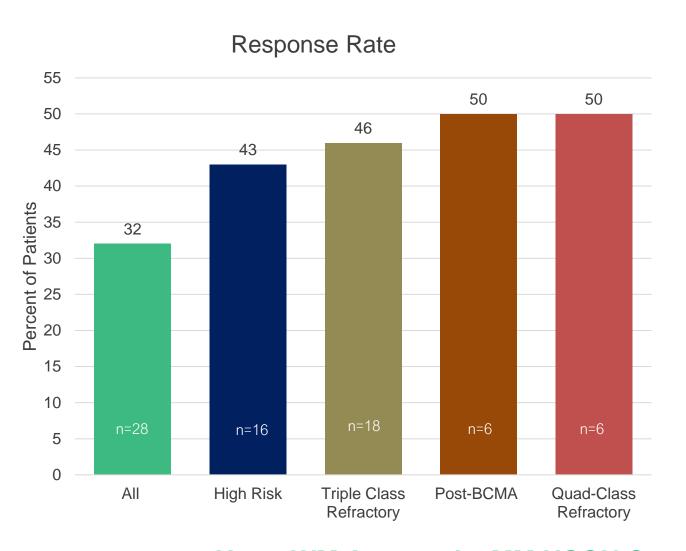
Extended PFS

Recurrent Squamous Cell Carcinoma Head & Neck



73% ORR with 64% CRR

Iopofosine I 131 Beyond WM: Phase 2a r/r Multiple Myeloma Subset Analyses



Additional Clinical Benefits

85.7% disease control

75% experienced tumor volume reduction

Triple class refractory mPFS = 3.4m Post-BCMA mPFS = 3.3m

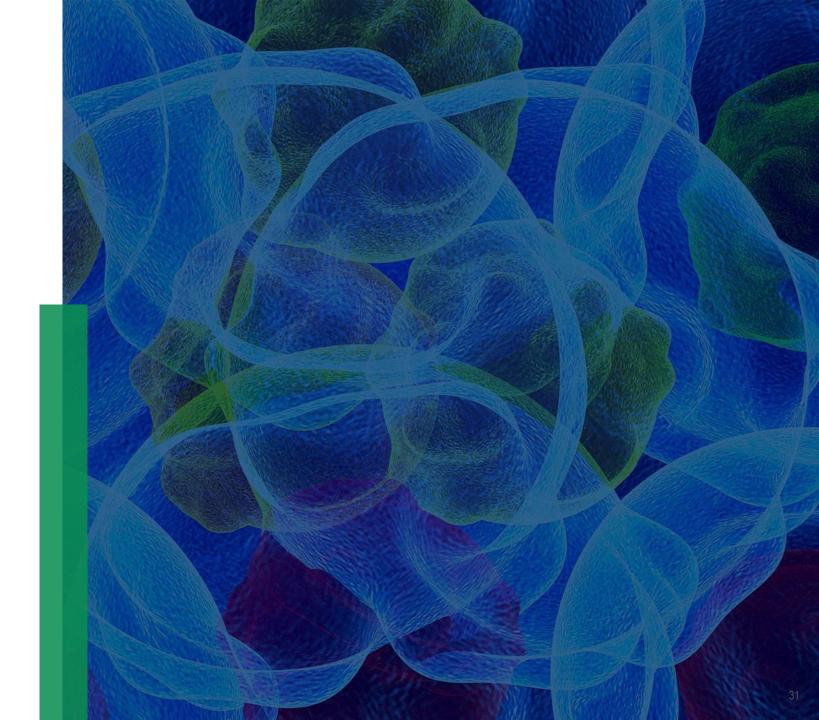
Upon WM Approval – MM NCCN Compendia Submission Planned





PRC Franchise

α-EmitterSolid Tumor





PRC Franchise Solid Tumor: CLR 121225 A Novel Alpha Emitter

²²⁵Ac-CLR 121225 - Key Considerations and Milestones

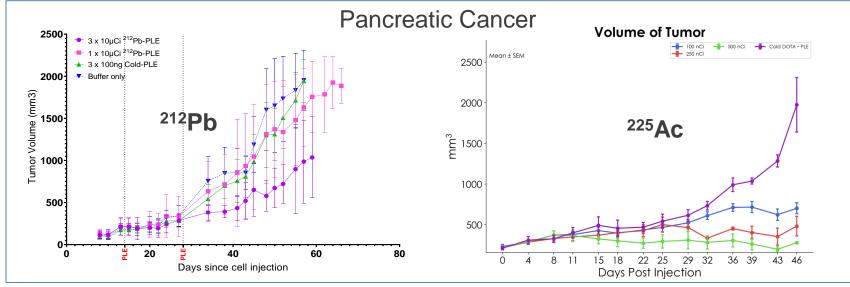
Rationale

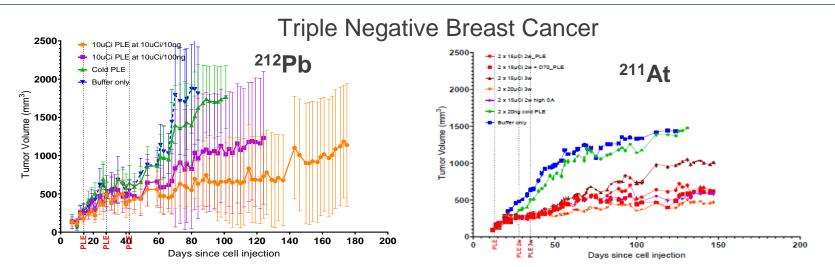
- Unique benefits of Cellectar's PRC platform uniform tumor distribution & route of excretion
- Demonstrated activity in multiple animal models
- Initial market could exceed \$1B revenue pancreatic cancer
- Accelerated development strategy initiated
 - Conduct a single large animal toxicity study; extensive existing toxicity data on base molecule
 - 3-month study with a multi-dose arm to facilitate fractionated/multi-dosing
 - Australia-based Phase 1 study; rapid initiation & cost efficient with easier GMP requirements
- Conduct standard dosimetry and Phase 1 3x3 dose escalation
 - 4 cohorts of single-dose and 3 cohorts of multiple-dose regimens (estimating 35 40 subjects)
 - Primary endpoint is safety (MTD); secondary endpoints ORR, PFS, imaging analysis
 - Initiate 4Q24/1Q25: ~\$3.1M in total costs



PRC Franchise Solid Tumor: Capacity to Deliver Any Alpha Emitter

The Right Isotope for the Right Tumor - ²¹²Pb (Lead), ²²⁵Ac (Actinium), ²¹¹At (Astatine), or Others





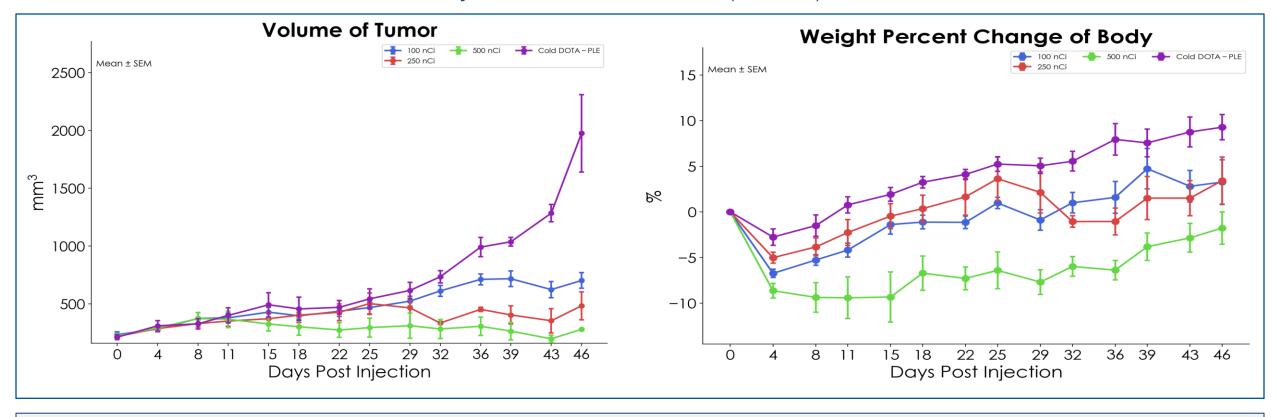
- Unique advantage to rapidly shift isotope with the same molecule
 - Accelerated development timelines
- Allows optimal isotope selection; pairing physical properties of isotope with tumor biology and microenvironment
 - Optimization of efficacy and tolerability
- Activity observed with all isotopes tested
 - Consistent isotope tissue distribution



PRC Franchise Capable of Producing Numerous Optimized Radiotherapies

PRC Franchise Solid Tumor: CLR 121225 A Novel Alpha Emitter

²²⁵Ac-CLR 121225 Preclinical Activity in Pancreatic Cancer (BxPC3)



- Refractory pancreatic cancer animal model; Day 0 tumor volume ~250 mm³; treatment dose on Day 15
- Compelling anti-tumor activity at all dose levels; 100 nCi, 250 nCi, and 500 nCi by single tail vein injection on Day 1
- All dose levels were well tolerated, with no organ toxicities observed



PRC Franchise Solid Tumor: CLR 121225 a Novel Alpha Emitter

²²⁵Ac-CLR 121225 Preclinical Program

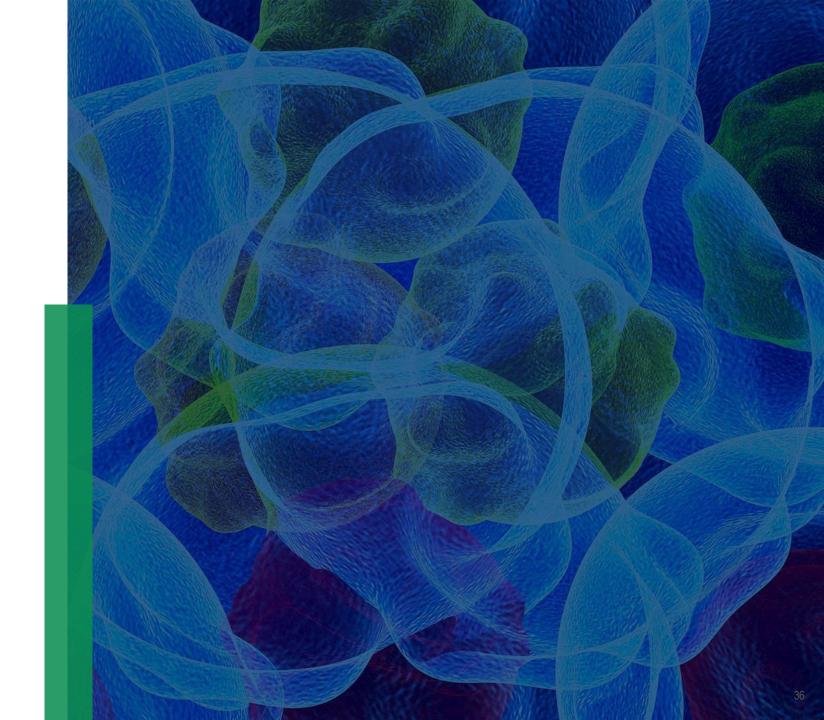
- Consistent drug distribution throughout the tumor allows for more effective treatment of bulky tumors
- Observed activity in solid tumors at all doses
 - Pancreatic
 - Triple negative breast
 - Ovarian
- Observed to be well tolerated with preferential biodistribution
- Next steps:
 - Dosing optimization in vivo
 - Complete IND enabling studies
 - Complete "GMP" manufacturing and scale-up for Phase 1 supply





Financials

Capitalization





Cellectar Biosciences: Financial Summary

Cash Position as of June 30, 2024 (millions)	\$25.9M
Capitalization as of March 31, 2024	
Common Stock Outstanding	33,164,466
Reserved for Issuance:	
Convertible Series D Preferred Stock (111.111 shares)	111,111
Convertible Series E-2 Preferred Stock (237.50 shares)	2,609,890
Convertible Series E-3 Preferred Stock (630.00 shares)	3,956,044
Warrants: 2023 Tranche B: \$4.7775 strike; expire 10 trading days after NDA approval (\$34.3M) 2022 Common: \$1.96 strike; expire October 2027 (\$8.2M) Other: various terms	7,179,492 4,201,044 1,149,381
Stock Options	2,351,901
Fully Diluted Shares as of March 31, 2024	54,723,329



Cellectar Biosciences: Corporate Focus

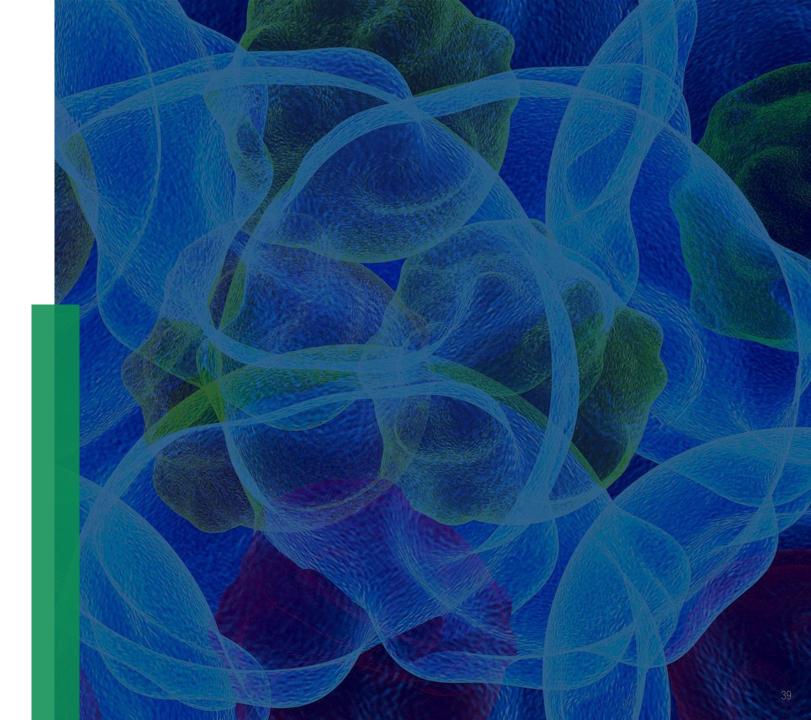
Objectives for Value Creation

- Complete final data analysis and submit NDA 4Q24 for iopofosine approval as a potentially first-in-class, novel therapy in r/r WM
- Prepare for iopofosine commercialization, which represents a strong revenue capture opportunity in a concentrated market
- Advance iopofosine development across pediatric solid tumors and indolent lymphomas
- Accelerate alpha emitter program to focus on areas of high preclinical activity and unmet need
- Validated phospholipid drug conjugate programs with the potential to transform targeted drug delivery and improve patient outcomes and safety





THANK YOU



NASDAQ: CLRB

Experienced Management



President, CEO and Director



Chief Operating Officer



Chad Kolean **Chief Financial Officer**



Shane Lea **Chief Commercial Officer**



Andrei Shustov SVP, Medical













Footnotes

- 1. Data on file
- 2. The expected timing of potential FDA approval is subject to risks and uncertainties beyond our control. There is no guarantee that the top-line date will support our NDA submission or that the FDA will approve iopofosine I 131 for commercial use. Even if we receive FDA approval, we may not be able to successfully commercialize iopofosine I 131.
- 3. The null hypothesis assumes a placebo effect of 10% combined with a 10% exclusion rate. This provides a null hypothesis of 20%. Said another way, if the lower bound of the two-tail test using a 95% confidence interval is greater than 20%, the null hypothesis, which states that there is no benefit with treatment with iopofosine, is rejected, and the alternative hypothesis is acceptance there is a statistical benefit of treating with iopofosine in this patient population. The primary endpoint will be analyzed using a 95% two-sided confidence interval calculated by the Clopper-Pearson method.
- 4. Internal claims analysis for Waldenstrom's macroglobulinemia (January 2019-October 2023)
- 5. Putnam Market Sizing 2023
- 6. Putnam Quantitative Research 1Q 2023 (n=102 MDs); Putnam Analysis and WM Advisory Boards
- 7. Komodo Claims Data
- 8. Real-world data large community oncology network
- 9. Market Value utilizes third-party market sizing, and company claims data for share, treatment counts, and normalizes for branded pricing
- 10. Puregmaa Khongorzul, Cai Jia Ling, Farhan Ullah Khan, Awais Ullah Ihsan, Juan Zhang; Antibody–Drug Conjugates: A Comprehensive Review. Mol Cancer Res 1 January 2020; 18 (1): 3-19. https://doi.org/10.1158/1541-7786.MCR-19-0582

