Corporate Presentation

October 2023

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), 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 lymphoplasmycotic 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; the future impacts of the COVID-19 pandemic on our business, employees, operating results, ability to recruit patients for clinical studies, ability to obtain additional funding, product development programs, research and development programs, suppliers and third-party manufacturers; 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 such as the COVID-19 pandemic, 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 Nasdaq; 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; as well as our ability to complete enrollment and release top-line data from the WM CLOVER-WaM trial in the second half of 2023, our ability to receive break-through therapy approval and 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, 2022, and our Form 10-Q for the quarter ended June 30, 2023.

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.
Company Highlights
Proprietary Drug Conjugate Platform to Target Cancer

Targeting cancer with a novel drug phospholipid ether drug conjugate platform that takes advantage of cancers’ metabolic requirements

Iopofosine I 131, targeted radiotherapeutic; currently in the CLOVER-WaM pivotal clinical study for Waldenstrom’s macroglobulinemia (WM); FDA agreed-upon pathway

Exploiting iopofosine I 131 ability to cross BBB with CNS malignancies: CNS WM, pCNS lymphoma, CNS MM, and pediatric HGG

$24.5 million financing in September 2023, up to $78 million in additional milestone-based funding supporting strategic plan; including ~$44 million upon CLOVER-WaM top-line data

CLOVER-WaM Pivotal Study Top-line Data Expected 4Q 2023
Platform & Pipeline
Platform: Targeted Delivery to Tumor Cells
Universal Targeting with Diverse Payloads

<table>
<thead>
<tr>
<th>Profile</th>
<th>Phospholipid Drug Conjugate (PDC)</th>
<th>Antibody Drug Conjugate (ADC)</th>
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<tbody>
<tr>
<td>Diverse Payloads</td>
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<td>Universal Targeting</td>
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<td>&gt;1% Uptake</td>
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<tr>
<td>Penetration into CNS</td>
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<td>Targets Metastasis</td>
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<tr>
<td>Targets Cancer Stem Cells</td>
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<tr>
<td>Cytoplasmic Entry</td>
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</tbody>
</table>
Pipeline: PDC Scientific Platform Development Strategy
Enables a Diverse Franchise Portfolio to Deliver Value Creation Across a Broad Range of Therapeutic Modalities

<table>
<thead>
<tr>
<th>Radio-conjugates</th>
<th>Small-molecule drug conjugates</th>
<th>Peptide and nanobody drug conjugates</th>
<th>RNAi, siRNA, mRNA drug conjugates</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Radio-conjugate franchise</strong></td>
<td><strong>Small-molecule franchise</strong></td>
<td><strong>Biologics franchise</strong></td>
<td><strong>Nucleic acid franchise</strong></td>
</tr>
<tr>
<td>Targeted delivery of any radioisotope</td>
<td>Demonstrated in vivo safety and efficacy in multiple animal models</td>
<td>Targeting intracellular pathways that cannot be targeted with small molecules</td>
<td>Intracellular delivery of nucleic acids providing knockdown or knock-in gene control in cancer cells</td>
</tr>
<tr>
<td>Alpha and beta emitters</td>
<td>Pico and nanomolar activity</td>
<td></td>
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<tr>
<td>Iopofosine I 131 in a pivotal study</td>
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<tr>
<td>• Iopofosine</td>
<td>• PLK-1</td>
<td>• Targets not Disclosed</td>
<td>• Targets not Disclosed</td>
</tr>
<tr>
<td>• Alpha emitter</td>
<td>• Seco-duba</td>
<td></td>
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<tr>
<td>• Additional isotopes</td>
<td>• MMAF</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Other small molecules</td>
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</table>
Pipeline: Iopofosine I 131 Lead Candidate

Phospholipid Ether Radiotherapeutic to Target Cancer

Radio-Conjugate Franchise

Iopofosine I 131
Innovative targeted radiotherapeutic

1. Iopofosine granted designations for rare adult and pediatric cancers
   - 3 Fast Track Designations
   - 6 Orphan Drug Designations
   - 4 Rare Pediatric Disease Designations
   - 2 European Commission Orphan Drug
   - 1 PRIME Designation

2. CLOVER-WaM pivotal study in WM (NIH-SBIR $2M grant)
   Topline data expected Q4 2023

3. Defined regulatory pathway in WM
   Granted Orphan Drug, FDA Fast Track Designation
   and EMEA PRIME Designation

4. Market expansion strategy
   - Phase 2a study in post-BCMA MM
   - Phase 2a study in pCNS lymphoma
   - Phase 1b study pediatric high-grade glioma (NIH-SBIR $2M grant)
Pipeline: Iopofosine I 131 Manufacturing & Supply Chain

Multi-sourced Network Enables Uninterrupted Supply

Drug Product with 17-Day Shelf-life/Stability
Global Distribution of Finished Product Within 72 Hours
Iopofosine I 131
Waldenstrom's macroglobulinemia
Iopofosine I 131: WM U.S. Market Opportunity
Concentrated, Prevalent Patient Population with High Unmet Clinical Need

Market Size

- **26,000** Prevalence\(^3\)
- **Annual Incidence**
  - ~1,500-1,900

Patient Treatment Journey

- **81%** of patients under care in the last year are currently receiving active treatment\(^4\)
- **78%** of patients will receive 3\(^{rd}\) line treatment\(^4\)
- **~50%** of 3\(^{rd}\) line patients not receiving treatment likely to consider new treatment options\(^4\)

Unmet Need - No Approved Treatments

- **15-25%** Major Response Rates (MRR) currently reported\(^6\) in 3\(^{rd}\) line +
- **0% CRs** reported with single-agent BTKi therapy
- **Continuous therapy** may increase non-compliance, toxicity and financial burden

Patients are concentrated geographically in large community and academic accounts\(^4\)

Significant Opportunity to Improve and Expand Treatment in a Substantial, Concentrated, Prevalent Patient Population by Providing Improved MRRs, CRs, and Fixed vs Continuous Therapy
Iopofosine I 131: WM U.S. Market Opportunity
Estimated Total Addressable Market\(^3\)

- **Prevalence**
  - \(\sim 26,000\) patients
  - Watchful waiting patients
  - 2nd line patients: \(6,864\)
  - 3rd line or greater patients: \(4,316\)

- **Iopofosine I 131 Addressable Population**
  - 3rd line or greater indication: \(\sim 3,328\) patients receive 3rd line or greater therapy
  - 3rd line or greater indicated patients: \(\sim 4,316\) patients eligible to receive 3rd line or greater treatment
  - Patients who have received 2 prior therapies and are not currently on active treatment: \(\sim 988\)

Significant Market for a 3rd Line or Greater Therapy with Market Expansion Opportunity for Iopofosine I 131 with its novel MOA.
Iopofosine I 131: WM U.S. Market Opportunity
A Substantial Market with Underserved 3rd Line + Patient Population

Greater than 4,000 3rd Line + patients at launch

Annual incidence of 3rd line patients ~900

Ultra orphan pricing; BTKi monotherapy cost ~$1M

Substantial Revenue opportunity for underserved 3rd line + setting

WM Represents a Highly Scalable Market Providing Cellectar with the Capacity to Establish an Efficient Commercial Infrastructure to Market Iopofosine in the U.S.
Iopofosine I 131: WM Phase 2a Response Rates
Positive Data Post 2nd Line Leads to Pivotal Study

- Median LOT = 3; tested in BTKi failure patients
  - 5 of 6 patients refractory to previous treatment
  - 1 of 6 responded to previous treatment (SCT)
- Responses across all genotypes
  - 100% Overall Response Rate (ORR)
  - 83.3% Major Response Rate (MRR); 100% in high risk
  - 16.7% Complete Response Rate (CRR)
- DOR >18 months; compares favorably to salvage therapies at ~6
- Progression Free Survival of >20 months

New MOA and Fixed Course of Treatment; Responses Across All Genotypes Regardless of Numerous Prior Therapies

Genotype: WT = Wild Type UN = Unknown
Iopofosine I 131: Global WM Pivotal Study Design
FDA Agreed Upon Pathway; Single Arm Registration Study (n=50)

Enrollment Criteria

WM Patients who received 2 Prior lines of therapy, including failed or suboptimal response to BTKi

Treatment and Evaluation Period (1 year)

- 4 doses over two cycles (71 days)
- Active evaluation period for up to 12 months from initial dose

Long Term Safety Follow-up (3 years)

Response Assessment Window

- Days 1, 15, 57, 71
- 15 mCi/m² per dose

Endpoints: Major Response Rate

Key Secondaries: DoR, TFR, ORR

MRR of 20% (10 of 50 Patients) Achieves Statistical Significance
Iopofosine I 131: WM Pivotal Study Expected Milestones

- **4Q 2023**: Complete Enrollment
- **March/2Q 2024**: NDA Submission
- **Sept/4Q 2024**: FDA Approval
- **4Q 2024**: Commercial Launch

*Priority Review Submission Based on Fast Track Designation; If Accepted, NDA Review ~6 Months*
Iopofosine I 131
Multiple Myeloma & B-NHL
Lopofosine I 131: Multiple Myeloma Phase 1 & Phase 2a
Best Response Per IMWG Criteria

Best Response by Patient (n=64)

- Progressive Disease (PD)
- Stable Disease (SD)
- Minor Response (MR)
- Partial Response (PR)
- Very Good Partial Response (VGPR)

Percent Reduction

- <60 mCi TAD
- >60 mCi TAD
- Quad-class refractory
Iopofosine I 131: Phase 2a r/r Multiple Myeloma
Evaluation of Patients at Target Dose - Subset Analyses

Overall Response Rate in Patients Receiving >60mCi Total Administered Dose (TAD)

Additional Clinical Patient Benefits
- 85.7% disease control
- 75% of patients experienced tumor volume reduction
- Triple class refractory mPFS = 3.4m
- Post-BCMA mPFS = 3.3m

Patient Subset Response Rates Range from 43-50%

Percent of Patients

<table>
<thead>
<tr>
<th>Subset</th>
<th>n</th>
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</thead>
<tbody>
<tr>
<td>All</td>
<td>28</td>
</tr>
<tr>
<td>High Risk</td>
<td>16</td>
</tr>
<tr>
<td>Triple Class Refractory</td>
<td>18</td>
</tr>
<tr>
<td>Post-BCMA</td>
<td>6</td>
</tr>
<tr>
<td>Quad-Class Refractory</td>
<td>6</td>
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</tbody>
</table>
Iopofosine I 131: Phase 2a r/r B-NHL

~60% of Patients Were Multi-drug Refractory

Non-Hodgkin’s Lymphoma

Key Efficacy Endpoints

- 50% ORR in NHL Median 3rd Line
- 25% Complete Response Rate
- 71.4% Clinical Benefit Rate
- Median tumor volume reduction of >25%

Patients Receiving ≥60 mCi TAD Achieved 50% ORR
Iopofosine I 131: pCNS Lymphoma Phase 2a Study
Crossing the Blood Brain Barrier - Central Nervous System Lymphoma Patient

- 61-year-old female patient presented with a 168 mm² brain lesion at screening
- Cycle 1 administered at Day 1 and Day 15; lesion reduced by 93% at Day 43 (~12 mm² lesion remaining)
- Cycle 2 administered at Day 54 and Day 71; **Complete Response** achieved with no evidence of tumor

**Justifies Inclusion and Treatment of WM Patients with CNS Involvement (Bing-Neel Syndrome), in CLOVER-WaM Pivotal Study**
Iopofosine I 131: Observed Safety Profile

Predictable and Manageable AE Profile

Limited Off-target Effects: No Significant Cardiovascular, Hepatic, Renal, Neurologic, Gastrointestinal Toxicity or Serious Infections

Adverse Events (n=175 patients)
Pipeline
Solid Tumor and Platform
Pipeline: Iopofosine I 131 In Solid Tumor
Crossing the Blood Brain Barrier - Refractory Ependymoma Pediatric Patient

- Thirteen-year-old male patient received 4 prior lines of therapy
- Total administered dose 165 mCi over two fractionated cycles
- Outcome
  - Tumor volume reduction observed - stable disease
  - Progression Free Survival (PFS) = 5.1 months

Phase 1b Pediatric HGG Study Initiation 3Q 2023; Supported by NCI-SBIR $2M Grant
Pipeline: Platform Validation - in vitro and in vivo

Ability to Provide Targeted Delivery of Small Molecules, Oligos, Peptides

- Small molecule cytotoxins demonstrate potent *in vitro* & *in vivo* activity with multiple classes of compounds and various tumors models
- Oligo payload demonstrates significant knockdown following single tail vein injection
- All payloads well tolerated

### JIMT 1 Breast Cancer

- **Control**
- **Low Dosage**
- **High Dosage**

### Panc-1 siRNA Knockdown

<table>
<thead>
<tr>
<th>Percent Reduction</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Untreated</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 hours</td>
<td>-0.10</td>
<td>-0.10</td>
<td>-0.10</td>
<td>-0.10</td>
</tr>
<tr>
<td>96 hours</td>
<td>-0.10</td>
<td>-0.10</td>
<td>-0.10</td>
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<tr>
<td>24 hours</td>
<td>-0.10</td>
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<td>-0.10</td>
<td>-0.10</td>
<td>-0.10</td>
<td>-0.10</td>
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</table>

### Payload Analysis

<table>
<thead>
<tr>
<th>Payload 2</th>
<th>A375</th>
<th>A549</th>
<th>MCF-7</th>
<th>Capan-2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>IC50 (µM)</strong></td>
<td>&lt;0.003</td>
<td>&lt;0.003</td>
<td>&lt;0.003</td>
<td>0.019</td>
</tr>
<tr>
<td><strong>EC50 (µM)</strong></td>
<td>&lt;0.003</td>
<td>&lt;0.003</td>
<td>&lt;0.003</td>
<td>0.020</td>
</tr>
<tr>
<td><strong>Minimum % viability</strong></td>
<td>0.28</td>
<td>0</td>
<td>0</td>
<td>0</td>
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</table>

**IC50** and **EC50** values are indicative of the concentration required to inhibit cell viability by 50% and 50% of the maximum effect, respectively.
# Financial Summary

<table>
<thead>
<tr>
<th>Cash position as of June 30, 2023 (millions)</th>
<th>$ 5.2 M</th>
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<tr>
<td>Funding from September 2023 financing (before fees and expenses) (millions)</td>
<td>$ 24.5 M</td>
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## Capitalization as of June 30, 2023

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<tbody>
<tr>
<td>Common Stock Outstanding</td>
<td>9,740,507</td>
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<tr>
<td>Pre-Funded Warrants</td>
<td>1,520,710</td>
</tr>
<tr>
<td>Reserved for issuance:</td>
<td></td>
</tr>
<tr>
<td>Convertible Preferred Stock</td>
<td>111,111</td>
</tr>
<tr>
<td>Warrants</td>
<td>6,714,479</td>
</tr>
<tr>
<td>Stock Options</td>
<td>2,217,756</td>
</tr>
<tr>
<td>Fully Diluted Shares Outstanding as of June 30, 2023:</td>
<td>20,304,563</td>
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*Up to $78 Million in Additional Milestone-based Funding; Including ~$44 Million Upon CLOVER-WaM Top-line Data Expected 4Q23*
Company Summary
Targeting Cancer with a Proprietary Drug Phospholipid Ether Drug Conjugate Platform

• Iopfosine I 131 in clinical development for rare adult and pediatric cancers
• Waldenstrom’s macroglobulinemia phase 2a data
  – 100% ORR – 83% MRR – 16.7% CR
  – Fixed & short duration therapy, r/r patient population, broad genotype activity
• WM CLOVER-WaM pivotal study with defined regulatory pathway
  – Top-line data expected 4Q 2023
• Clinical activity in multiple hematologic malignancies: MM, B-NHL, pCNSL
• Validation of platform beyond hematologic malignancies
  – Phase 1b study in pediatric high-grade glioma (NIH-SBIR $2M grant)
  – Preclinical activity with small molecules, oligos and peptides

Novel Platform May Enable a Diverse Franchise Portfolio to Deliver Value Creation Across a Broad Range of Therapeutic Modalities
THANK YOU
Experienced Management

James Caruso
President, CEO and Director

Jarrod Longcor
Chief Operations Officer

Chad Kolean
Chief Financial Officer

Shane Lea
Chief Commercial Officer

Dr. Andrei Shustov
Senior Vice President, Medical

Full Professor of Medicine at:

UNIVERSITY OF WASHINGTON

&

Fred Hutch Cancer Center
Footnotes

1. Data on file


3. Putnam Market Sizing 2023

4. Putnam Quantitative Research 1Q 2023 (n=102 MDs); Putnam Analysis and WM Advisory Boards

5. Real-world data - large community practice


7. Iopofosine I 131 Phase 2 CLOVER-1 Study in B-cell Lymphomas

8. Data as of November 2020

9. Data updated as of February 2022

10. 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.

11. Commercially available to physicians