Corporate Presentation

October 2019

NASDAQ: CLRB
Forward-Looking Statements

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. Drug discovery and development involve a high degree of risk. Factors that might cause such a material difference include, among others, uncertainties related to the ability to raise additional capital required to complete the development programs described herein, uncertainties related to the disruptions at our sole supplier of CLR 131, the ability to attract and retain partners for our technologies, the identification of lead compounds, the successful preclinical development thereof, the completion of clinical trials, the FDA review process and other government regulation, the ability of our pharmaceutical collaborators to successfully develop and commercialize drug candidates, competition from other pharmaceutical companies, product pricing and third-party reimbursement. 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 herein. 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, 2018.
Presentation Topics

1. Overview
2. Phase 2 R/R Hematologic Malignancies
3. Phase 1 R/R Multiple Myeloma
4. Phase 1 R/R Pediatric Malignancies
5. Corporate Information
## Company Highlights

- Developing orphan and rare disease oncology pipeline
- Validated cancer-targeting platform
- Demonstrated activity in 4 hematologic malignancies
- 4 Phase 2 clinical data readouts planned for 2019
- Efficient capital allocation and low fixed-cost structure

*Multiple, Value-Creative, Near Term Milestone Potential*
###Projected Clinical Development Milestones

<table>
<thead>
<tr>
<th>PDC Program</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CLR 131 Phase 2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Hematologic Malignancies</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CLR 131 Phase 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Multiple Myeloma</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CLR 131 Phase 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pediatric</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proprietary PDC</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**CLR 131 Granted Five U.S. Orphan Drug Designations, 1 EU ODD, Four Rare Pediatric Designations and 2 Fast Track Designations**

- Interim Data
- Initiations
- Data

Validated Market, Therapeutic Isotope & Targeted Delivery

- 2020 Radiotherapeutic Market Forecast
  - ~$9.31 billion revenue
  - CAGR of 10.2% through 2025
- Recent Transactions
  - Advanced Accelerator Applications - $3.9B
  - Endocyte - $2.1B
  - Fusion - $100M Financing
- Validated therapeutic isotope I-131
  - Azedra™ (iobenguane I-131)
  - Bexxar™ (CD-20 antibody I-131)
  - MIBG-131 (MIBG I-131)
- CLR 131 validated cancer targeting
  - Small molecule phospholipid ether
  - Multiple payloads tested

CLR 131: Combination of a Validated Delivery Platform and Payload

## CLR 131 Hematologic Clinical Studies

### R/R Hematologic Phase 2 Study
**Single 25mCi/m² Dose**

- **Multiple Myeloma Interim Data**
  - Average 7th line systemic treatment
  - 30% Overall Response Rate
  - 20% Minimal Response Rate
  - 100% Disease Control Rate

- **Diffuse large B-cell lymphoma Interim Data**
  - Average 4th line systemic treatment
  - 16.6% Complete Response Rate; DOR\(^1\) 510+ days
  - 33% Overall Response Rate
  - 50% Disease Control Rate

- **Waldenstrom’s (LPL) Patient Case Study**
  - >98% reduction in total tumor volume
  - DOR at 200+ days - two cycles
  - Second 25mCi/m² administered

**A Single 25mCi/m² Dose Achieved 30%+ Response Rates in 3 R/R Hematologic Cancers**

### R/R Multiple Myeloma Phase 1 Study
**37.5mCi/m² Fractionated Dose**

- **Cohort 6 Data**
  - Average 6th line systemic treatment
  - 50% Overall Response Rate
  - 50% Minimal Response Rate
  - 100% Disease Control Rate

- **All cohorts safe and tolerable**
  - No patients experiencing:
    - Peripheral neuropathy
    - Deep vein thrombosis
    - Cardiotoxicities
    - Embolisms
    - Gastrointestinal toxicities

- No change in liver enzymes or renal function
- Cytopenias most common adverse events, all viewed as predictable and manageable

**Fractionated 37.5mCi/m² Dose Achieved 50% Response Rate in R/R Multiple Myeloma**

---

1. Duration of Response
Phase 2 R/R Hematologic Malignancies Ongoing Study

U.S. Fast Track Designation and U.S. & E.U. ODD Granted for MM

- Patients Screened
  - N=10 MM
  - N=10 DLBCL
  - N=10 CLL/SLL, MZL, LPL
  - N=10 MCL

Interim efficacy assessments; expand cohorts based on performance

- 20-30 MM
- 10-30 DLBCL
- 10-30 CLL/SLL, MZL, LPL
- 10-30 MCL

Final Efficacy Assessments
Follow-up (≥ 1 yr After Last Dose)

- Primary endpoint is efficacy as determined by response rate
- Patients received a single 25mCi/m² dose; potential for a 2nd cycle
- Patients now receive a fractionated 37.5mCi/m² dose; potential for a 2nd cycle

Day 1
Cycle 1 (18.75mCi/m² x 2)
Day 1 & Day 8

Days 75-180
Cycle 2 (18.75mCi/m² x 2)
Day 1 & Day 8

The European Union ODD is Given to Medicinal Products That Represent a Significant Benefit Over Existing Treatment

R/R Multiple Myeloma Market & Phase 2 Interim Data

U.S. Prevalence ~131K\(^1\); ~40% of Eligible 3\(^{rd}\) Line+ Patients Elect No TRX

Response Rates for On-Market Fourth and Fifth Line TRX are 15% & 8%

 CLR 131 Phase 2 Single Dose TRX\(^2\)

- First 10 patients enrolled
- Average 7\(^{th}\) line systemic TRX
- Single 25mCi/m\(^2\) dose
  - ≤30 minute infusion
- 30% Overall Response Rate
  - 1 VGPR\(^4\)
  - 2PRs\(^5\)
  - 73% to 92% response reductions\(^6\)
- 100% Disease Control Rate

Response Rate for CLR 131 Seventh Line Average TRX Achieves 30%

Phase 2 R/R Myeloma Patient Case Study

25mCi/m^2 Single Dose - 2 Cycles Administered

- 78-year-old male • 2 prior lines of combination treatment
- 35% plasma cell involvement • 30% cellularity
- Total Accumulated Dose: 92.8mCi

Dosing Response

Duration of Response at 222 Days+
Assessment Ongoing
R/R DLBCL Market and Phase 2 Interim Data

DLBCL is an Aggressive Form of Lymphoma; U.S. Prevalence ~194K

New Drugs Needed in R/R DLBCL

Includes Single and Combination Treatments

Response Rates

Overall Response Rate (%)

First Second Third

0 10 20 30 40 50 60 70 80 90 100

DLBCL

Response Rates for On-Market

Third Line TRX is 20%

CLR 131 Phase 2 Single Dose DLBCL TRX

Response Rates

Overall Response Rate (%)

0 10 20 30 40 50 60 70 80 90 100

DLBCL

• Average 4th line systemic TRX
• Single 25mCi/m² dose
  – ≤30 minute infusion
• 16.6% Complete Response Rate
• 33% Overall Response Rate
  – 56 - >99% tumor reduction
• 50% Disease Control Rate

Response Rate for CLR 131

Fourth Line Average TRX Achieves 33%

1. SEER Cancer Statistics Fact Sheet: Non-Hodgkin Lymphoma (DLBCL represents between 25% - 30% of NHL); Accessed April 22, 2019 2. Data reported (as of 7-18-18) is not from a head to head clinical study 3. Lugano Classification
Phase 2 R/R DLBCL Patient Case Study

Complete Response at 25mCi/m² Single Dose

**Patient CT Scans**

*Subpectoral Lymph Node Mass*

- Female, 52 years old
  - c-Myc positive (>40%); BCL-2 negative
- 3 prior lines of systemic treatment
- Relapse within 10 months of 1st line - R-CHOP
- Refractory to 2nd line RICE and 3rd line chemotherapeutic soup
- Patient maintains CR; 510+ days post treatment

**Tumor Reduction**

*Duration of Response 510+ Days*
Phase 2 R/R LPL (Waldenstrom’s) Patient Case Study

First LPL Patient Treated With CLR 131; 25mCi/m² Single Dose - 2 Cycles Administered

- Baseline pleural effusion & multiple large tumor nodules; third line treatment
- Following 1st infusion
  - Dramatic improvements in multiple disease related pathologies with limited cytopenias
- CT day 187 showed 98% reduction in overall tumor burden and complete resolution of 4/5 tumors

**Tumor Reduction**

![Graph showing tumor reduction over time](image)

- **Baseline 1st Dose CT Scan**
- **Baseline 2nd Dose CT Scan**

**Days From CLR 131 Infusion**

- **Screen**
- **Day 52**
- **Day 120**
- **Day 186/64**
- **Day 207/85**

**Lesion Size**

- **mm²**

- **Screen**
- **1st 25mCi/m² Dose**
- **2nd 25mCi/m² Dose**

**Assessment**

- Ongoing
Proposed Pivotal Study Design
(Later Line MM Trial)

**Proposed Pivotal Study Design**

- Relapsed/refractory >4th line Multiple Myeloma
- ~20 patients to be enrolled prior to interim assessment
- Pivotal, single-arm
  - Primary endpoint: Overall Response Rate (ORR)
  - Secondary endpoints: Overall Survival (OS), Progression Free Survival (PFS)

**Program Timing**

1. Phase 2 to complete 2H19
2. Pivotal study initiation 2H20 to 1H21
3. NDA submission 2023

**Clinical Costs**

1. Pivotal study = $20 - $25 million
2. Eligible for pivotal study SBIR Grant up to $4M

---

1. Overview

2. Phase 2 R/R Hematologic Malignancies

3. Phase 1 R/R Multiple Myeloma

4. Phase 1 R/R Pediatric Malignancies

5. Corporate Information
New Treatments are Needed

Third Line Average mOS is ~12 Months & ~9 Months for Dual7/Penta8 Refractory

Single ≤30 Minute Infusion of CLR 131 Achieves mOS of 22 Months

## Phase 1 & 2 Safety Profile

### Treatment Emergent Adverse Events (AE’s) Phase 1

<table>
<thead>
<tr>
<th>System Organ Class</th>
<th>Preferred Term</th>
<th>All Treated Subjects n=26 n(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Anemia</td>
<td>9 (35)</td>
</tr>
<tr>
<td></td>
<td>Lymphocyte count decreased</td>
<td>18 (69)</td>
</tr>
<tr>
<td></td>
<td>Neutropenia</td>
<td>13 (50)</td>
</tr>
<tr>
<td></td>
<td>Thrombocytopenia</td>
<td>16 (62)</td>
</tr>
<tr>
<td></td>
<td>White blood cell count decreased</td>
<td>15 (58)</td>
</tr>
</tbody>
</table>

### Treatment Emergent Adverse Events (AE’s) Phase 1 & 2

<table>
<thead>
<tr>
<th>System Organ Class</th>
<th>Preferred Term</th>
<th>All Treated Subjects n=50 n(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Anemia</td>
<td>18 (36)</td>
</tr>
<tr>
<td></td>
<td>Lymphocyte count decreased</td>
<td>24 (48)</td>
</tr>
<tr>
<td></td>
<td>Neutropenia</td>
<td>25 (50)</td>
</tr>
<tr>
<td></td>
<td>Thrombocytopenia</td>
<td>30 (60)</td>
</tr>
<tr>
<td></td>
<td>White blood cell count decreased</td>
<td>26 (52)</td>
</tr>
</tbody>
</table>

- Consistent adverse event profile
  - Modest reduction in occurrence of adverse events (AE’s) observed in Phase 2
  - Cytopenias are predictable and manageable
  - No unexpected drug related adverse events
- Fractionated dosing reduces AE’s and increases administered drug
- No changes in liver function, no peripheral neuropathy or other debilitating AEs

**CLR 131 Demonstrates a Safe & Well Tolerated Adverse Event Profile**

1. Grade 3 and 4 related adverse events as of 3/01/19
2. n=Number of subjects with AE’s
3. n= Number of subjects exposed
1. Overview
2. Phase 2 R/R Hematologic Malignancies
3. Phase 1 R/R Multiple Myeloma
4. Phase 1 R/R Pediatric Malignancies
5. Corporate Information
Proposed Phase 2/3 Pivotal Study Design

- Granted ODD & RPDD for NB, RMS, Osteo & Ewing’s Sarcoma
- Eligible for Fast Track, Breakthrough and SPA submissions
- Initial enrollment of 10-15 patients to confirm dose; upon appropriate efficacy expand into Phase 3
- Phase 3 pivotal study single arm ~65 patients
  - Primary endpoint: Overall Response Rate
  - Secondary endpoints: EFS, CBR, PFS

Program Timing

- Phase 1 to complete 3Q20
- Phase 2/3 pivotal initiation 2Q21
- NDA submission 2023

Clinical Costs

- Phase 1 = ~$4 million
- Phase 2/3 pivotal study = ~$11 - $12 million

Approval in Any Indication May Provide Priority Review Voucher and Potential for NCCN Compendium Listing for Other Tumor Types
## CLR 131 & MIBG Product Profile Comparison

### MIBG I-131 Currently Second Line Standard of Care for Neuroblastoma

<table>
<thead>
<tr>
<th>Profile</th>
<th>CLR 131</th>
<th>Naxitamab &amp; Omburtamab</th>
<th>MIBG I-131</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Delivery Vehicle/Payload</strong></td>
<td>Phospholipid Ether (PLE)/Iodine-131</td>
<td>Bispecific Antibody &amp; Antibody Drug Conjugate/Iodine-131</td>
<td>Meta-iodobenzylguanidine/Iodine-131</td>
</tr>
<tr>
<td><strong>Therapeutic Regimen</strong></td>
<td>Single 30 minute infusion, Total dose ~45-80mCi</td>
<td>Naxi: 3mg/kg 3x wk 1 35 min IV Ombur: depot directly into CNS Total dose ~75mCi</td>
<td>3-5 cycles, ~300 mCi per cycle, 90-120 minute infusion Total dose ~1000-1500mCi</td>
</tr>
<tr>
<td><strong>Hospitalization</strong></td>
<td>TBD&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Naxi: Outpatient Ombur: TBD (depot requires surgery)</td>
<td>4-8 days</td>
</tr>
<tr>
<td><strong>Capable to Cross the Blood Brain Barrier</strong></td>
<td>🟢</td>
<td>🟥(&lt;br&gt;depot requires surgery)</td>
<td>🟥</td>
</tr>
<tr>
<td><strong>Ability to Target Metastasis</strong></td>
<td>🟢</td>
<td>🟢</td>
<td>🟥</td>
</tr>
<tr>
<td><strong>Stem Cell Transplant Support</strong></td>
<td>✨</td>
<td>✨</td>
<td>✨</td>
</tr>
<tr>
<td><strong>NB Response Rate</strong></td>
<td>TBD</td>
<td>TBD</td>
<td>20-60% (~30%)</td>
</tr>
<tr>
<td><strong>Liver Function Changes</strong></td>
<td>0%&lt;sup&gt;2&lt;/sup&gt;</td>
<td>NR</td>
<td>79.6%</td>
</tr>
</tbody>
</table>

1. To Be Determined  
2. In adults

**Legend:**
- **FAVORABLE/POSSESES**
- **NOT YET KNOWN**
- **DEFICIENT/LACKS**
1. Overview
2. Phase 2 R/R Hematologic Malignancies
3. Phase 1 R/R Multiple Myeloma
4. Phase 1 R/R Pediatric Malignancies
5. Corporate Information
# Capitalization as of August 31, 2019

<table>
<thead>
<tr>
<th>Stock Type</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Stock Outstanding</td>
<td>9,396,036</td>
</tr>
<tr>
<td>Reserved for issuance:</td>
<td></td>
</tr>
<tr>
<td>Convertible Preferred Stock</td>
<td>537,500</td>
</tr>
<tr>
<td>Warrants</td>
<td>9,268,352</td>
</tr>
<tr>
<td>Employee Stock Options</td>
<td>520,714</td>
</tr>
<tr>
<td><strong>Fully Diluted</strong></td>
<td><strong>19,722,602</strong></td>
</tr>
</tbody>
</table>

**Cash/Equivalents as of June 30**  

- $16.8 million

*Cash Believed to Be Adequate to Fund Operations Through 2020*
Company Summary

CLR 131 exhibits activity in 4 hematologic malignancies

At maximum dose tested to date, 50% Overall Response Rate in R/R Multiple Myeloma

Pediatric study initiated, potential for accelerated regulatory pathway and pediatric voucher

4 Phase 2 clinical data readouts planned for 2019

Proof of Concept in Lead Clinical Program with Multiple Value-Creative, Near Term Milestone Potential
Thank You