This presentation includes forward-looking statements within the meaning of the Safe Harbor provisions of the Private Securities Litigation Reform Act of 1995. Such statements are subject to a number of risks and uncertainties, the outcome of which could materially and/or adversely affect actual future results and the trading price of our securities. These forward-looking statements are based on current assumptions that involve risks, uncertainties and other factors that may cause the actual results, events or developments to be materially different from those expressed or implied by such forward-looking statements. These risks and uncertainties include, but are not limited to:

- our ability to conduct and complete clinical trials in our currently anticipated timeframes, including risks relating to potential delays in clinical trials caused by the COVID-19 pandemic, as well as our ability to submit an NDA for pacritinib in currently anticipated timelines;
- potential increases in patient morbidity and/or mortality in clinical trials due to the COVID-19 pandemic;
- clinical trials may not demonstrate safety and efficacy of pacritinib;
- the risk that even if a clinical trial meets one or more primary endpoints, the FDA may nevertheless determine that the benefit/risk profile of pacritinib at the selected doses does not support approval or that additional data is required for approval;
- our assumptions regarding planned expenditures and sufficiency of cash to fund operations may be incorrect, including due to the impact of expanded product development and clinical activities on operating expenses, as well as delayed timelines due to the pandemic;
- adverse conditions in the general domestic and global economic markets, including instability due to pandemic and/or social unrest;
- our ability to receive regulatory approval for pacritinib pursuant to the accelerated approval pathway or at all;
- the risk that pacritinib may be delayed to a point where it is not commercially viable, whether due to competition or loss of patent rights; and
- those risks more fully discussed in the section entitled "Risk Factors" in our Annual Report on Form 10-K for the year ended December 31, 2019 and subsequent quarterly reports on Form 10-Q.

These forward-looking statements speak only as of the date hereof and we assume no obligation to update these forward-looking statements, and readers are cautioned not to place undue reliance on such forward-looking statements.
CTI Biopharma

- Seattle-based biotechnology company
- Addressing two areas of unmet medical need
  - Myelofibrosis
  - COVID-19
- **Pacritinib** – a multi-kinase inhibitor
- Major shareholders
  - BVF, NEA, Stonepine & OrbiMed*

*Based on publicly available beneficial ownership data as of 3/31/20 filed with the SEC on Schedules 13D, 13F and 13G and Forms 3 and 4.
Multi-kinase Activity of Pacritinib

Multi-kinase Activity
Myelofibrosis and COVID-19

>1200 patients dosed
with pacritinib

Two Phase 3 Studies
now enrolling

PACRITINIB

JAK2  IRAK1  CSF-1R

PACIFICA

PRE·VENT
# Pacritinib Development Program

<table>
<thead>
<tr>
<th>Program</th>
<th>Indication</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
<th>Approved</th>
</tr>
</thead>
<tbody>
<tr>
<td>PACIFICA</td>
<td>Myelofibrosis, severe thrombocytopenia (enrolling)</td>
<td></td>
<td></td>
<td></td>
<td>●</td>
</tr>
<tr>
<td>PRE-VENT</td>
<td>Severe COVID-19 (enrolling)</td>
<td></td>
<td></td>
<td></td>
<td>●</td>
</tr>
<tr>
<td>PAC203</td>
<td>High risk myelofibrosis, second-line therapy</td>
<td></td>
<td></td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>PERSIST-2</td>
<td>Myelofibrosis (platelets ≤100,000/µL)</td>
<td></td>
<td></td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>PERSIST-1</td>
<td>Myelofibrosis (all platelet counts)</td>
<td></td>
<td></td>
<td>●</td>
<td></td>
</tr>
</tbody>
</table>
Pacritinib and Myelofibrosis
Myelofibrosis and Unmet Medical Needs

- Malignant bone marrow cancer with median survival 6 years after diagnosis
- Standard of care is ruxolitinib
- **Severe thrombocytopenia** is the most important unmet medical need

**Debilitating Symptoms**

- **Impaired Blood Cell Production**
  - Thrombocytopenia, Anemia
- **Constitutional Symptoms**
  - Fatigue, Night Sweats, Itching, Bone Pain, Weight Loss
- **Symptomatic Splenomegaly**
  - Abdominal Pain, Early Satiety, Bloating
Two Paths to Severe Thrombocytopenia

Almost all MF patients become thrombocytopenic

**Disease-related**
- At diagnosis or with disease progression
- Typically worsens over time

**Treatment-related**
- Typically treated with ruxolitinib
- Eventually discontinue ruxolitinib due to cytopenias

All severely thrombocytopenic patients are anemic, experience low WBC and increased Grade 3 fibrosis, are typically transfusion dependent and have high symptom loads.
Severe Thrombocytopenia

Short overall survival with with platelet count <50,000/µL

Source: Masarova L. et al., Eur J Haematol. 2017
Ruxolitinib and Thrombocytopenia

Significant and rapid decline in platelet counts with ruxolitinib at doses of 15-20mg BID

....associated with dose reductions

....which can reduce clinical benefit

Market Opportunity for Pacritinib

**Prevalence**

- **20K** in the USA
- **28K** in Europe

**Myelofibrosis Prevalence Report**
Masarova & Messa
Leukemia Research 2020

- Survey of 807 physicians
  - 12 countries
  - 54% academic centers
- Concluded that **35%** of MF patients have severe thrombocytopenia
Significant Market Opportunity for Pacritinib

Prevalence

35% of MF patients have Severe Thrombocytopenia

- Front-line
- Discontinued ruxolitinib
- Low dose ruxolitinib

# Phase 3 SVR Efficacy Data

SVR response in all patient populations

<table>
<thead>
<tr>
<th>All Patients</th>
<th>PERSIST-1</th>
<th>PERSIST-2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pacritinib 400mg QD (N=220)</td>
<td>BAT (N=107)</td>
</tr>
<tr>
<td>≥35% SVR</td>
<td>19.1%</td>
<td>4.7%</td>
</tr>
<tr>
<td>P-value vs. BAT</td>
<td>0.0003</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Platelet Count &lt;50,000/µL</th>
<th>Pacritinib (all doses) (N=104)</th>
<th>BAT (N=48)</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥35% SVR</td>
<td>23%</td>
<td>2%</td>
</tr>
<tr>
<td>P-value vs. BAT</td>
<td>0.0007</td>
<td>-</td>
</tr>
</tbody>
</table>

PAC203 Efficacy

17% SVR in Severely Thrombocytopenia Patients

Spleen Volume Change at Week 24 by Dose

Baseline platelet count
- <50,000/μL
- ≥50,000/μL

Source: Gerds, et al., ASH 2019 Oral Presentation
PAC203 Adverse Events

Consistent safety profile between studies

<table>
<thead>
<tr>
<th>Adverse Event (%)</th>
<th>100mg QD (N=52)</th>
<th>100mg BID (N=55)</th>
<th>200mg BID (N=54)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diarrhea</td>
<td>19%</td>
<td>22%</td>
<td>30%</td>
</tr>
<tr>
<td>Thrombocytopenia</td>
<td>21%</td>
<td>22%</td>
<td>41%</td>
</tr>
<tr>
<td>Nausea</td>
<td>23%</td>
<td>20%</td>
<td>28%</td>
</tr>
<tr>
<td>Fatigue</td>
<td>17%</td>
<td>24%</td>
<td>24%</td>
</tr>
<tr>
<td>Abdominal pain</td>
<td>17%</td>
<td>11%</td>
<td>24%</td>
</tr>
<tr>
<td>Pyrexia</td>
<td>15%</td>
<td>16%</td>
<td>13%</td>
</tr>
<tr>
<td>Anemia</td>
<td>10%</td>
<td>11%</td>
<td>24%</td>
</tr>
<tr>
<td>Peripheral edema</td>
<td>14%</td>
<td>9%</td>
<td>17%</td>
</tr>
<tr>
<td>Decreased Appetite</td>
<td>12%</td>
<td>7%</td>
<td>19%</td>
</tr>
</tbody>
</table>

Sources: Gerds A. et al., ASH 2019 Oral Presentation.
PACIFICA Phase 3 Clinical Trial

Primary or secondary myelofibrosis

Severe thrombocytopenia (platelets <50,000/µL)

Pacritinib
200 mg BID

Randomized 2:1

Primary Analysis
N=168
SVR at 24 weeks

Secondary Analyses
N=348
TSS at 24 weeks
Overall Survival

- Now actively enrolling; 130+ clinical sites worldwide
- 1st and 2nd-line MF patients with severe thrombocytopenia
- Powered for SVR (85%) and TSS (80%)
- Top-line data expected early 2022*
- Accelerated approval pathway agreed with FDA

SVR, ≥35% spleen volume reduction; TSS, ≥50% reduction in total symptom score. *Enrollment projections may change in light of the COVID-19 pandemic.
Accelerated Approval for Pacritinib

Primary Efficacy Analysis
N=168

SVR at 24 weeks

Secondary Efficacy Analyses
N=348

TSS at 24 weeks

PACIFICA
N=348

MF - severe thrombocytopenia
(platelets <50,000/µL)

First and Second-line

Top-line data
Early 2022*
Potential
Accelerated Approval 2022

End of Study data
2023
Potential
Regular Approval 2024

Pacritinib and COVID-19
COVID-19 Immune Dysregulation

• Patients with COVID-19 have high levels of cytokines involved in multiple signaling pathways
  - IL-1, IL-6, IL-7, TNF-α, ferritin, GM-CSF

• Elevations in IL-6 and IL-1 contribute to \( T_{H17} \) differentiation, implicated in pathogenesis of ARDS\(^1\)

• Elevations in ferritin and GM-CSF suggest macrophage activation syndrome, implicated in cytokine storm

• High cytokine levels associated with high mortality\(^2\)

Advantages of Pacritinib

• Targets multiple pathways rather than single cytokines

• May block key inflammatory pathways, including those involved in Th17 differentiation and macrophage stimulation

• No JAK1 inhibition – may preserve anti-viral response
Pacritinib Immunomodulatory Effects

Severe COVID-19 is defined as confirmed disease in patients who are hospitalized with hypoxia (blood oxygen saturation [SpO2] ≤93% on room air at sea level), respiratory rate >30, arterial oxygen partial pressure [PaO2]/fraction of inspired oxygen [FiO2] <300, or lung infiltrates >50% but do not require Invasive Mechanical Ventilation.

- Hospitalized patient with Severe COVID-19¹
- Age ≥ 18 years
- No other active infections
- History of bleeding (grade 2 or higher)

1:1 Randomization (N = 358)

1º Endpoint
- Mechanical Ventilation/ECMO, or death by 28 days

Key 2º Endpoints
- 15-day and 28-day mortality
- Ventilator-free days

• Top-line data expected by end of 2020

¹Severe COVID-19 is defined as confirmed disease in patients who are hospitalized with hypoxia (blood oxygen saturation [SpO2] ≤93% on room air at sea level), respiratory rate >30, arterial oxygen partial pressure [PaO2]/fraction of inspired oxygen [FiO2] <300, or lung infiltrates >50% but do not require Invasive Mechanical Ventilation.
Financial and Corporate
## Financial Overview

<table>
<thead>
<tr>
<th>Balance Sheet</th>
<th>3/31/20</th>
<th>12/31/19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash, Cash Equivalents and Short-term investments</td>
<td>$81.1 M</td>
<td>$33.7 M</td>
</tr>
<tr>
<td>Debt</td>
<td>$8.9 M</td>
<td>$10.2 M</td>
</tr>
<tr>
<td>Common Shares outstanding</td>
<td>73.7 M shares*</td>
<td>58.0 M shares</td>
</tr>
</tbody>
</table>

*Does not include 44.8 M shares issuable underlying the outstanding preferred stock.*
Pacritinib Overview

• Multi-kinase inhibitor
  • JAK2, IRAK1 & CSF-1R

• Two Phase 3 trials
  • PACIFICA
    • Demonstrated clinical benefit in MF patients with severe thrombocytopenia
    • MF with severe thrombocytopenia
    • Topline data expected early 2022*
    • Potential for Accelerated Approval in 2022
  • PRE-VENT
    • Severe COVID-19
    • Topline data expected in 2020

*Enrollment projections may change in light of the COVID-19 pandemic.
Contact:
Maeve Conneighton
maeve@argotpartners.com