Forward Looking Statements

This presentation and other matters discussed today or answers that may be given in response to questions may include statements that are, or may be deemed, “forward-looking statements.” Any statements that we make today, other than historical facts, are forward looking statements made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. All statements, other than statements of historical facts, included in this presentation regarding our future results of operations and financial position, strategy and plans, and our expectations for future operations are forward-looking statements. In some cases, you can identify forward-looking statements by terms such as “believe,” “may,” “will,” “estimate,” “continue,” “anticipate,” “design,” “intend,” “expect,” “could,” “plan,” “potential,” “predict,” “seek,” “should,” “would” or the negative version of these words and similar expressions intended to identify forward-looking statements, and similar expression and comparable terminology intended to identify forward-looking statements.

Forward-looking statements reflect management's current expectations, are based on certain assumptions and involve certain risks and uncertainties. Forward-looking statements include, but are not limited to, statements about: financial projections and estimates and their underlying assumptions, including, without limitation, sufficiency of our cash resources and needs for and ability to obtain additional financing; anticipated timing of patient enrollment in our clinical studies and availability of clinical data; anticipated timing of completing our clinical studies; the size and growth of our potential patient population; the mechanism of action of our product candidates; the ability to obtain and maintain regulatory approval of our product candidates; and the timing and success of the development and commercialization of our anticipated product candidates and the availability of alternative therapies for our target market. The Company's actual results could differ materially from those anticipated in these forward-looking statements as a result of various factors. Additional information regarding factors that could cause results to differ are available in the Company's other periodic filings with the SEC.
Changing the Course of NASH & Liver Disease

Building a leading NASH program

- Cenicriviroc (CVC) Phase 2b CENTAUR data Q3 2016
- Evogliptin (EVO) + CVC combination study planned for 2016

CVC: potent immuno-inflammatory agent

- Once-daily dosing & favorable safety profile; cornerstone potential for NASH
- Phase 2 in Primary Sclerosing Cholangitis: potential to be disease modifying

Building long-term value

- Transition to Phase 3 for CVC single-agent, combinations to follow
- Q1 2016 cash balance: $53 million; cash runway to H2 2017
Leading NASH Program, Growth Potential Across Immuno-inflammatory Diseases

NASH and Supporting Clinical Studies

<table>
<thead>
<tr>
<th>Study</th>
<th>Preclinical</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
</tr>
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<tbody>
<tr>
<td>CENTAUR Phase 2b</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Primary endpoint Q3 2016</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>ORION Phase 2a</td>
<td></td>
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<td></td>
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<tr>
<td>Metabolic parameters, full data Q4 2016</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Phase 3 enabling studies</td>
<td></td>
<td></td>
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<tr>
<td>Ongoing</td>
<td></td>
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</tbody>
</table>

NASH Combinations

<table>
<thead>
<tr>
<th>Combination</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVC + EVO</td>
<td>Clinical studies to start 2016</td>
</tr>
<tr>
<td>Other Combination Studies</td>
<td></td>
</tr>
</tbody>
</table>

Other Immuno-inflammation

<table>
<thead>
<tr>
<th>Study</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERSEUS – Primary Sclerosing Cholangitis (PSC)</td>
<td>Enrolling</td>
</tr>
<tr>
<td>Diabetic nephropathy</td>
<td></td>
</tr>
<tr>
<td>Key markers for kidney function to be measured in NASH P2b</td>
<td></td>
</tr>
<tr>
<td>Oncology</td>
<td></td>
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</tbody>
</table>

HIV

<table>
<thead>
<tr>
<th>Study</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV (Anti-retroviral)</td>
<td>Phase 2b completed</td>
</tr>
<tr>
<td>HIV (Immuno-inflammation)</td>
<td>Adjunctive Care Settings</td>
</tr>
</tbody>
</table>
NASH Unmet Need
Obesity is Rapidly Increasing Among US adults

NASH is now the second most common indication for liver transplant

1. CDC. Behavioral Risk Factor Surveillance System (BMI ≥30, or about 30 lbs. overweight for 5’4” person); 2. Wong et al. 2015
NASH: A Severe Form of Fatty Liver Disease

Healthy → NAFLD → NASH (NAFLD + inflammation) → High-risk NASH (NAFLD + inflammation and fibrosis type 2 diabetes, high BMI) → Cirrhosis HCC

- 86 – 108m in USA\(^2,^3\)
- 9 – 15m in USA\(^4\)
- 6 – 10m affected\(^5\)
  At greatest risk of progression to cirrhosis or other serious liver conditions

Focus of CVC clinical development
Phase 2b CENTAUR Study

CVC for NASH
Profile of An Ideal Product for NASH

<table>
<thead>
<tr>
<th>Ideal Attribute</th>
<th>CVC Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target cause of damage &amp; fibrosis</td>
<td>✅ CCR2 &amp; CCR5 central in inflammatory and fibrotic pathways and insulin resistance</td>
</tr>
<tr>
<td>Anti-fibrotic &amp; anti-inflammatory</td>
<td>✅ Improvement in sCD14, ELF, APRI &amp; FIB-4</td>
</tr>
<tr>
<td></td>
<td>✅ Reduced fibrosis across multiple models</td>
</tr>
<tr>
<td>Safe for chronic setting</td>
<td>✅ 600+ subjects treated to date, 115 up to 48 weeks</td>
</tr>
<tr>
<td></td>
<td>✅ Well tolerated; Few drug-related AEs</td>
</tr>
<tr>
<td>Oral, combinable</td>
<td>✅ 30-40 hour half life</td>
</tr>
<tr>
<td></td>
<td>✅ One pill, once-daily formulation</td>
</tr>
</tbody>
</table>
The Molecular Engines that drive NASH
CVC Targets Inflammation & Fibrogenesis

NASH Disease Progression

Metabolic-driven liver injury

Evokes inflammatory response

And fibrogenesis

CVC Mechanism

Block overactive inflammatory signaling

Disrupt signaling to activate stellate cells

- Fat accumulation drives liver injury
- Kupffer Cell activation
- Monocyte/macrophage recruitment
- Hepatic Stellate Cell activation

Friedman, S. et al., Contemporary Clinical Trials, 47, March 2016
# Strong Data Set Supporting CVC in NASH

| HIV Ph2b: Inflammation and Fibrosis Biomarkers<sup>1,2</sup> | ✓ Reduction in validated markers of:  
• Fibrosis (APRI, FIB-4, & ELF)  
• Inflammation (sCD14) |
| --- | --- |
| ORION Interim Analysis (n=35) | ✓ Favorable safety profile in NAFL & NASH subjects  
✓ Numeric Improvement in metabolic parameters |
| 600+ Subjects Dosed in Phase 1 and Phase 2 | ✓ Favorable safety and lipid profile  
✓ Therapeutic dose established (150 mg once daily)  
✓ Once-daily dosing (30-40 hour half-life) |
| Hepatic Impairment Safety Phase 1<sup>3</sup> |  |
| NASH Mouse Models<sup>4</sup> | ✓ Improvement in fibrosis across models  
✓ Improvement in NAFLD Activity Score  
✓ Reductions in monocyte-driven inflammation  
✓ Hepato-protective effect |
| Liver Fibrosis Rat Model<sup>5</sup> |  |
| Kidney Fibrosis Mouse Model<sup>6</sup> |  |
| Models of Inflammation and Liver Injury<sup>7–9</sup> |  |

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CVC Shows a Significant Reduction in Fibrosis and NAFLD Activity Score in the MCD Mouse Model

Treatment with CVC reduced hepatic macrophages and fibrosis

Treatment with CVC significantly reduced ballooning and NAS

EASL 2016
CVC Clinical Data
CVC Normalized Elevated APRI and FIB-4 Scores

HIV+ Subjects with paired Baseline and Week 24 and/or 48 data

APRI
Subjects with Baseline score of ≥0.5

Week 24
75% (12/16)

Week 48
67% (8/12)

FIB-4
Subjects with Baseline score of ≥1.45

Week 24
73% (11/15)

Week 48
71% (10/14)

Score reduced to <0.5  Score ≥0.5

Score reduced to <1.45  Score ≥1.45
Non-invasive Tools to Predict Fibrosis Stage

• APRI and FIB-4 are used to predict liver fibrosis in patients with HCV\textsuperscript{1,2} and NAFLD\textsuperscript{3,4}

• In NASH subjects, early drop in FIB-4 score was significantly associated with fibrosis improvement at 72 weeks\textsuperscript{5}

• From CENTAUR Study Screening Characteristics\textsuperscript{6}...
  
  – APRI and FIB-4 scores increased with severity of fibrosis stage
  
  – APRI and FIB-4 cut-offs were identified to reduce the number of nonfibrotic NASH candidates undergoing liver biopsy in Phase 3
    
    • APRI $\geq 0.53$ was predictive of liver fibrosis (Stage 1–4), with a PPV of 92%
    
    • FIB-4 $\geq 1.11$ was predictive of liver fibrosis (Stage 1–4), with a PPV of 88%

CVC Improved Enhanced Liver Fibrosis Scores

• ELF is a biomarker fibrosis panel consisting of hyaluronic acid, procollagen III N-terminal propeptide and tissue inhibitor of metalloproteinases

• Significant decrease in ELF scores observed in CVC treated patients \( (p < 0.0001) \)

• No significant change in patients treated with efavirenz \( (p = 0.6322) \)
The Molecular Engines that drive NASH

Focus of ORION

NAFLD → Inflammation → NASH → Fibrosis → Cirrhosis/HCC

Focus of CENTAUR

Metabolic Abnormality
ORION: NAFLD Phase 2a Study

Interim Analysis: potent CCR2/5 antagonism impacts metabolic parameters

45 subjects enrolled
Key eligibility criteria

- Adults (18—75 years)
- BMI ≥30 kg/m2
- Prediabetes or T2DM
  - FPG: 100—270 mg/dL
  - HbA1c: 5.7—10.0%
- Suspected NAFLD warranting liver biopsy

Randomization 1:1

Baseline

Interim (Week 12)

Primary (Week 24)

CVC 150 mg

Placebo

PBO Subtracted Interim Results

- HbA1c: -0.36 (CI; -0.74, 0.01)
- FPG: -11.52 mg/dL (CI; -28.35, 5.31)
- FFA (AUC-2h): -4.9 mmol/L (CI; -11.4, 1.6)

Primary endpoint
- Change in insulin sensitivity over 24 weeks of treatment

Secondary endpoints
- Measures of monocyte/macrophage activation and function
- Non-invasive imaging correlated to liver histology
- Fasting metabolic parameters
- Biomarkers of inflammation
- Measures of CCR2/CCR5 blockade and receptor occupancy
- Safety & Tolerability

Screening liver biopsy
Stratified by presence or absence of NASH

Final liver biopsy
NASH patients only

NCT02217475
CENTAUR Phase 2b Study
**CENTAUR: NASH with Fibrosis Phase 2b Study**

**Enrolled 289 subjects**
- **Global study**
- **Key eligibility criteria**
  - Biopsy diagnosis of NASH with fibrosis
  - Enriched for patients with
    - T2DM
    - high BMI with ≥1 criteria of metabolic syndrome
    - bridging fibrosis and/or definite NASH

**Randomization 1:1**

**Completed Enrollment (June 15)**
- **Baseline biopsy**
- **CVC 150 mg (Arm A)**
- **Placebo (Arm B+C)**

**Year 1 Primary (Q3 16)**
- **Primary endpoint**
  - 2-point improvement in NAS without worsening of fibrosis
- **Key secondary endpoint**
  - Resolution of NASH without worsening of fibrosis

**Year 2 (Q3 17)**
- **50% placebo assigned to CVC 150mg during Year 2**
- **Other endpoints**
  - Improvement in fibrosis stage
  - Collagen morphometry
  - α-SMA, CK-18
  - Validated fibrosis scores
  - Noninvasive imaging biomarkers
  - Kidney function

Friedman et al, Contemporary Clinical Trials 47 (2016) 356–365
NCT02217475
The majority of CENTAUR patients have NAS ≥5 (74%) and moderate-to-bridging fibrosis (67%), where placebo response is lowest in previous studies.
EVO for NASH
The Molecular Engines that Drive NASH

NAFLD

Metabolic Abnormality

Inflammation

NASH

Fibrosis

Cirrhosis HCC

Evogliptin

Targets metabolic abnormalities

Cenicriviroc

Targets inflammation and fibrogenesis
Dipeptidyl Peptidase-4 (DPP-4) Inhibition

**Systemic Effect**

- Widely used class for the treatment of Type 2 Diabetes

- Systemically, DPP-4 inhibition results in GLP-1 mediated hypoglycemia and other beneficial effects relevant to the NASH population including:
  - Delayed gastric emptying
  - Increased satiety
  - Increased glucose-dependent insulin secretion
  - Decreased glucagon secretion
  - Improved beta cell function

**Liver Specific**

- DPP-4 is highly expressed in the liver and plays a direct role in:
  - Regulation of hepatic gluconeogenesis
  - Regulation of lipid metabolism

- In NASH, increased DPP-4 serum levels and hepatic DPP-4 expression is correlated with disease severity.

- In preclinical and clinical settings, DPP-4 inhibition has been shown to:
  - Decrease hepatic glucose production
  - Improve hepatic triglyceride content and steatosis
  - Reduce histologic markers of inflammation and ballooning

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1. Pharmacotherapy 2010
3. Omar et al 2014
5. Kishitani et al, 2014
7. Firneisz et al, 2010
11. Lu et al, 2012
15. Jung et al, 2015
17. Kanazawa et al, 2014
Evogliptin Overview

- Oral, once daily 5mg tablet
- Potent and reversible DPP-4 inhibition with high selectivity
  - Same DPP-4 class as sitagliptin
- Approved in 2015 in Korea for Type 2 Diabetes Mellitus*
  - Tested in over 750 patients
  - Evaluated in monotherapy and in combination with metformin in Phase 3 Studies
  - Comparable efficacy and safety to sitagliptin (Januvia)

<table>
<thead>
<tr>
<th>Brand Name (Korea)</th>
<th>Suganon® (Evogliptin)</th>
</tr>
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<tbody>
<tr>
<td>Dose</td>
<td>5mg once daily Single tablet</td>
</tr>
<tr>
<td>Half-life</td>
<td>32-39h</td>
</tr>
<tr>
<td>Hepatic Metabolism</td>
<td>No clinically meaningful metabolites</td>
</tr>
<tr>
<td>Dose adjustment in renal impairment</td>
<td>No</td>
</tr>
<tr>
<td>Co-Administration with CYP3A4 inducers</td>
<td>Yes</td>
</tr>
<tr>
<td>IC$_{50}$ in Human Plasma</td>
<td>7.5 nM</td>
</tr>
</tbody>
</table>

*Not approved in US
1. C. F. Deacon & H. E. Lebovitz, 2016
## Transaction Overview

<table>
<thead>
<tr>
<th>Product</th>
<th>Evogliptin to Tobira</th>
<th>Cenicriviroc to Dong-A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Territory</td>
<td>United States, Canada, Europe, Australia</td>
<td>South Korea</td>
</tr>
<tr>
<td>Field of Use</td>
<td>All indications</td>
<td>All indications</td>
</tr>
<tr>
<td>Economics</td>
<td>• Upfront - $1.5M</td>
<td>• Upfront - $0.5M</td>
</tr>
<tr>
<td></td>
<td>• Up to $25 million in payments linked to the achievement of Phase 3 completion and regulatory approvals and $10 million for additional indications.</td>
<td>• Up to $2.5 million in payments linked to the achievement of development and commercial milestones</td>
</tr>
<tr>
<td></td>
<td>• Up $35 million in commercial milestones and tiered royalty payments based on net sales</td>
<td>• Tiered royalty payments based on net sales</td>
</tr>
</tbody>
</table>

Planning for CVC + EVO in clinic in 2016
CVC for Primary Sclerosing Cholangitis
Primary Sclerosing Cholangitis (PSC)

• Chronic cholestatic disease affecting bile ducts
  – Progresses to cirrhosis over 10-15 years
  – 10-15% develop cholangiocarcinoma

• U.S. prevalence 44,000; 60-80% concomitant IBD
  – Age at diagnosis: 41 years old (symptomatic)
  – Treatment is Liver Transplant; No approved drug

• CCL2 plays a key role in PSC

• Genetic data suggest important role of CCR5
  – CCR5-Δ32 is protective for PSC
  – CCL5 promoter-activating mutation is associated with PSC

• CVC differentiation
  – Potentially disease modifying
  – Suitable for chronic administration (oral, QD, well-tolerated)

2. Henckaerts Gut 2007; 56 89129
PERSEUS – PSC Proof of Concept Study Design

25 subjects
7-10 centers (US & CA)

Key eligibility criteria
• Adult with large duct PSC
• Serum ALP ≥ 1.5 times ULN
• Confirmed IBD
• Non-cirrhotics

Primary endpoint
Change from baseline in serum ALP through Week 24

Other analyses:
• Proportion of subjects achieving:
  • ALP normalization
  • <1.5 x ULN
  • 50% decrease in ALP
• Hepatic biochemistries
• Fibroscan
• Safety/tolerability
• Mayo IBD Score
Summary
Building Value

- Initiate Phase 3 NASH program
- PERSEUS Phase 2 data readout
- Initiate CVC + EVO Phase 2

2017

H2 2016
- CENTAUR primary endpoint (Q3)
- Finalize Phase 3 design (Q4)
- CVC + EVO Phase 1 (Q4)

H1 2016
- ORION Phase 2a interim data
- Complete Phase 3 enabling studies

- Initiate proof of concept clinical study in PSC
- Initiate NASH combination programs

H1 2016: 2016
H2 2016: 2016
2017: 2017
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Company Contact:

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iclements@tobiratx.com

www.tobiratx.com