A new paradigm for early diagnosis and surveillance for liver cancer

Investor presentation 2016
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What is Glycotest?

A precision medicine company detecting early-stage liver cancer

Founded 2012 on technology innovated at the Baruch S. Blumberg Institute and Drexel University College of Medicine (Philadelphia)

$8.9m
Glycotest technology has benefitted from $8.9 million in grants to the innovators over past years

$2.1m
$2.1 million invested by Net Scientific

IP
Proprietary blood-based biomarkers, panels and algorithms

3
Three issued US patents; additional patents pending internationally
Our target market

Focused on liver cancer surveillance

Large at-risk population
*Over 100 million in US and over 2 billion globally*

3.1 million patients in the US are currently candidates for liver cancer surveillance

Lead product – HCC Panel for detecting hepatocellular carcinoma to score likelihood of disease
Our mission

To help save lives from liver cancer in the US and worldwide

We are developing non-invasive blood tests that detect early-stage liver cancer

Our proprietary technologies could revolutionize care and treatment for people at risk due to liver cancer and chronic liver disease – both people with viral hepatitis and the rapidly growing population with non-viral hepatitis due to obesity and metabolic disease
Early detection of liver cancer is a growing unmet need. It is a disease that has poor early detection which contributes to its status as one of the most deadly cancers in the US.

If it is caught early enough it can be effectively treated.

Our HCC Panel has the potential to help millions of people and make a significant contribution to value based healthcare that most payors are adopting to cope with rising, ageing populations.

+300%  
Increase of liver cancer  
Liver cancer incidence has more than tripled since 1980  
American Cancer Society

700,000  
People every year  
Number diagnosed with liver cancer throughout the world  
American Cancer Society

27,170  
Will die during 2016 in the US  
18,280 men and 8,890 women will die of liver cancers this year  
American Cancer Society
Detection of early-stage liver cancer is a serious, growing unmet need

**Liver cancer is a $1 billion opportunity**

Huge and growing populations with viral and non-viral hepatitis are driving progressive fibrosis, liver cancer risk and need for effective disease surveillance

<table>
<thead>
<tr>
<th>Condition</th>
<th>Population</th>
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</thead>
<tbody>
<tr>
<td>Chronic hepatitis B. Incurable</td>
<td>2.2m people</td>
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<tr>
<td>Chronic hepatitis C. Liver cancer risk persists despite cure</td>
<td>3.2m people</td>
</tr>
<tr>
<td>Fatty liver disease and NASH / ASH. Rapidly growing populations due to obesity and metabolic disease</td>
<td>100m people</td>
</tr>
<tr>
<td>Cirrhosis. Secondary to hepatitis; proximate cause of most liver cancer</td>
<td>3.2m people</td>
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</table>

*Liver cancer detection is a $1 billion opportunity*
Setting a new standard for early diagnosis and surveillance for liver cancer

• Commercial clinical laboratory services for patients at risk for liver cancer with issued patents to >50 glycoprotein biomarkers

• $1 billion opportunity – populations with viral and non-viral hepatitis driving progressive fibrosis, liver cancer risk and need for effective disease surveillance

• Current blood tests and imaging modalities have low sensitivity and/or specificity—curable early-stage disease is being missed

• Glycotest’s lead product – HCC Panel – significantly outperforms currently dominant blood test (AFP) in 208 patient head-to-head study

• Seeking $10 million Series A financing to advance towards commercialization of the HCC Panel

Launching in Q4 2017
Profitable in 2019—expected revenue $26 million
Value proposition

- **Glycotest is at the forefront in surveillance for early stage liver cancer**
  - Well defined critical unmet clinical needs
  - Large and growing US and global markets
  - No currently available technology solutions
  - Glycotest has the proprietary biomarkers, assay technology and algorithm to provide physicians with actionable information

- **Liver cancer surveillance drives lower healthcare costs**
  - Early detection of HCC enables lower cost curative therapy—resection or ablation
  - Later stage HCC is only eligible for higher cost palliative therapy—TACE or chemotherapy
  - Cost effective HCC panel will enable early-stage HCC detection, lower cost treatment options, and better patient outcomes that will drive market adoption

- **Estimated market value for the HCC Panel is $818 million in the US alone**
  - Assumes only 620,000 US patients under surveillance—20% of 3.1 million eligible patients
Business model (HCC panel)

**US strategy**
Commercialize Laboratory Developed Test (LDT) service products in Glycotest CLIA lab—regulated by CMS (Medicare, Medicaid), not FDA

**Worldwide strategy**
Partner for large worldwide liver disease markets by technology transfer and licensing

**Rest of world**
Partner
Enter large markets such as Asia and Europe by technology transfer and licensing

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**US Glycotest CLIA lab**
Carry out tests in our own laboratory

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**Glycotest IP**

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**Revenues from royalties**
Our tests address serious unmet clinical needs

• Proprietary serum biomarkers and assay technology
• Proprietary biomarker panels, algorithms and single biomarker tests

Different biomarker patterns for different liver diseases
Current disease surveillance tests don’t work

• **Current blood tests and imaging modalities have low sensitivity and/or specificity**
  — AFP — best current blood test for hepatocellular carcinoma (HCC; major form of liver cancer) — misses >50% of disease (AFP-negative disease)
  — Ultrasound — only HCC surveillance test recommended by clinical guidelines — highly operator dependent; low sensitivity

• **Curable early-stage disease is being missed**
  — HCC is the fastest growing cause of cancer mortality in the US — will surpass breast cancer within 10 years

• **Effective disease surveillance tests are critical unmet clinical needs**
  — Liver cancer tests to identify curable early-stage disease
  — Liver fibrosis test to stage disease and determine when to treat hepatitis
Liver cancer test competition

Glycotest’s HCC Panel has the promise of being the only truly effective surveillance test

<table>
<thead>
<tr>
<th>Wako Blood tests</th>
<th>Imaging</th>
<th>HCC Panel and Algorithm</th>
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<td>Effective for Early-stage HCC</td>
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<tr>
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<th>DCP</th>
<th>Ultrasound</th>
<th>CT</th>
<th>MRI</th>
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Go-to-market plan (HCC panel)

Commercial launch Strategy

- Commercial assay manufacturing development with CROs
- Open Glycotest lab—complete analytical validation, pre-analytical effects, algorithm training
- Establish CLIA certification / CAP accreditation for commercial operation
- Complete retrospective-prospective clinical validation study for commercial launch
- KOL engagement and aggressive publication program to support marketing

Coverage and reimbursement strategy

- Developed with QURE Healthcare and Morgan Lewis
- Conduct planned clinical utility studies with QURE
- Register the HCC panel and seek Medicare coverage through Palmetto MolDX program
- Positive decision from Palmetto will influence private payer policies
- High margin HCC Panel test projected by preliminary value-based pricing study
Recently filed HCC Panel application will extend patent life on lead product to 2036 and provide key coverage in China

PCT/US2006/017478
2026 expiration
- Methods for diagnosing liver disease using fucosylated biomarkers
- Issued US (7,776,550; 8,183,000) and Australian (2006244398; 2012247075) patents

US2009/0253180
2028 expiration
- Methods for diagnosing liver disease using fucosylated LRAGG
- Issued US patent (9,110,078)

PCT/US2010/044307
2030 expiration
- Engineered recombinant lectins for fucosylated biomarker assays
- Methods for detecting disease using engineered recombinant lectins
Lead product—HCC Panel

- **Algorithm-driven panel—surveillance for curable HCC**
  - To detect curable early-stage disease
  - To provide a convenient blood test that guides CT / MRI confirmation
  - For patients at risk due to both viral and non-viral hepatitis

- **Early-stage HCC is curable**
  - Resection and ablation lead to long-term disease free survival
  - Curative treatment is less costly than palliative care for later stage disease

- **Large and expanding population needs an effective HCC surveillance solution**
  - Cirrhosis + chronic hepatitis B worldwide cirrhosis – 3.1 million US; 323 million worldwide
  - NASH pandemic expanding market
  - Chronic testing opportunity – repeat testing every 3-6 months

- **Glycotest’s HCC Panel significantly outperforms currently dominant blood test (AFP) in 208 patient head-to-head study**
Lead product—HCC Panel

Performance superior to AFP for the discrimination of early-stage and AFP-negative HCC from cirrhosis

**AUROC (95% CI)**

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<th>Early-stage: HCC UNOS stage T1/T2 (N=69) vs. cirrhosis (N=93)</th>
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<tr>
<td>HCC Panel</td>
<td>0.98</td>
<td>0.98</td>
<td>0.97</td>
</tr>
<tr>
<td>% improvement</td>
<td>45%</td>
<td>66%</td>
<td>64%</td>
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<tr>
<td>AUROC</td>
<td>1.0</td>
<td>0.98</td>
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**Sensitivity (95% CI) at 90% specificity**

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<td>95%</td>
<td>95%</td>
<td>89%</td>
</tr>
<tr>
<td>% improvement</td>
<td>46%</td>
<td>64%</td>
<td>31%</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
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Early-stage AND AFP –: HCC (N=29) vs. cirrhosis (N=84)

HCC Etiology (%): HCV (61); HBV (6); Other (33)

Cirrhosis Etiology (%): HCV (48); HBV (10); Other (42)
Pipeline – CCA panel; Fibrosis test

- CCA Panel for cholangiocarcinoma surveillance
- Fibrosis Test for staging intermediate fibrosis
- AUROCs >0.9 and/or >20% higher (0.5–1 AUROC range) than comparators are clinically meaningful improvements

CCA (cholangiocarcinoma) Panel: CCA (N=39) vs. primary sclerosing cholangitis (N=31)
Ishak Stage F0-2 vs. F3-6 (HCV FibroSURE; historical data: Halfon, P, et al., Am J Gastroenterol. 2006; 101:547-555.)
Current status and timeline

Progress to date
— Individual biomarker evaluation in >800 patients
— Basic HCC algorithm development in 1000s of patients
— HCC Panel vs. AFP clinical study in 208 patients
— HCC Panel clinical validation study plan developed; investigators and sites identified
— HCC Panel coverage and reimbursement strategy developed; clinical utility and value-based pricing plans developed
— Pipeline opportunities in cholangiocarcinoma and fibrosis–cirrhosis identified

Current status
— HCC Panel commercial biomarker assay manufacturing methods development underway

Timeline to commercial launch of HCC Panel in 2017
— Q2 2016: Biomarker assay methods developed
— Q3 2016: Series A funding closed
— Q3/4 2016: Laboratory opened; assay methods qualified; team expanded; manufacturing; clinical sample collection initiated
— Q1/2 2017: Analytical validation; pre-analytical effects; algorithm training
— Q3 2017: Clinical validation; CLIA registration
— Q4 2017: Commercial launch
Management

Lawrence Cohen, CEO
Larry has over 30 year’s experience in the In Vitro diagnostic and medical device business. He has led large multinational businesses as well as venture-backed start-ups. During his career, he has added value to several enterprises by introducing new products, acquiring businesses and entering new geographical markets.

Charles Swindell, PhD, COO
Charles is an entrepreneurial life science executive in revenue and development-stage biotech companies. He has a record of rapidly grasping new technologies and products, identifying attractive commercial opportunities, and executing on strategic objectives.

Supported by

Innovator–Advisors
Timothy Block, PhD; Blumberg Institute; Hepatitis B Foundation
Anand Mehta, DPhil; Drexel University College

Manufacturing
Precision Antibody (reagent specialist)
Radix BioSolutions (assay specialist)

Corporate Counsel
Fahd Riaz; DLA Piper

Finance, HR and IT
NetScientific

Senior Clinical Advisor; MAB Chair
David Chernoff, MD; Industry Veteran
(Crescendo; XDx; CardioDx; Tethys; Chiron; Elan)

Clinical Study Support and Management
DOCRO (oncology diagnostics CRO)

Regulatory Affairs and Compliance
Elizabeth Lison; Advoccea(IVD specialist)

Coverage and Reimbursement
QURE Healthcare (health economics firm)
Andrew Ruskin; Morgan Lewis

Quality
Michael Kochersperger; NetScientific

Intellectual Property Counsel
Baker & Hostetler
### Medical Advisory Board

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Institution</th>
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<tr>
<td><strong>David Chernoff, MD</strong></td>
<td><strong>Chair</strong></td>
<td>Molecular Dx industry veteran; Crescendo; XDx; CardioDx; Tethys; Chiron; Elan</td>
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<tr>
<td><strong>Scott Friedman, MD</strong></td>
<td></td>
<td>Icahn School of Medicine at Mount Sinai, New York; Dean for Therapeutic Discovery; Chief, Division of Liver Diseases; Fishberg Professor of Medicine; Professor of Pharmacology and Systems Therapeutics</td>
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<tr>
<td><strong>Douglas Dieterich, MD</strong></td>
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<td>Icahn School of Medicine at Mount Sinai, New York; Director, Institute for Liver Medicine, Mount Sinai Health System; Professor of Medicine</td>
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**Gastroenterology**