Revolutionizing the Treatment of Cancer

March 2013
Safe Harbor Statement

The statements that follow (including projections and business trends) are forward-looking statements. Rexahn's actual results may differ materially from anticipated results, and expectations expressed in these forward-looking statements, as a result of certain risks and uncertainties, including Rexahn's lack of profitability, the need for additional capital to operate its business to develop its product candidates; the risk that Rexahn's development efforts relating to its product candidates may not be successful; the possibility of being unable to obtain regulatory approval of Rexahn's product candidates; the risk that the results of clinical trials may not be completed on time or support Rexahn's claims; demand for and market acceptance of Rexahn's drug candidates; Rexahn's reliance on third party researchers and manufacturers to develop its product candidates; Rexahn's ability to develop and obtain protection of its intellectual property; and other risk factors set forth from time to time in our filings with the Securities and Exchange Commission. Rexahn assumes no obligation to update these forward-looking statements.
Rexahn: Revolutionizing the Treatment of Cancer

Rexahn is a clinical stage biopharmaceutical company that discovers and develops novel, best-in-class, therapeutics for the treatment of cancer.

Rexahn targets novel mechanisms of action which are highly specific to cancer cells resulting in drug candidates that demonstrate:

- Increased efficacy and reduced toxicity
- Efficacy against multiple drug resistant cancer cells
- Synergism with existing cytotoxic compounds

The mechanistic nature of these agents also allows for the development of specific biomarkers to identify relevant patient populations
Rexahn Investment Highlights

**Targeting large cancer markets with high unmet need**

**Developing innovative therapeutics with best-in-class or market-leader potential**

- **Archexin**: Akt1 inhibitor in Phase II clinical development for pancreatic cancer, hematological malignancies and chemo-resistant solid tumors
- **RX-3117**: DNA synthesis inhibitor - completed successful exploratory Phase 1 trial in solid tumors - Teva to file IND and initiate Phase I clinical development in 2H13
- **RX-5902**: p68 RNA Helicase inhibitor starting Phase I clinical trial in solid tumors

**Partnership with Teva Pharmaceuticals for RX-3117**

**Rapidly advancing pipeline: Four clinical trials initiating in 2013 with data in 2014**

**Strong Intellectual Property position**
## Deep Oncology Pipeline

<table>
<thead>
<tr>
<th>Product/Program</th>
<th>Mechanism of Action</th>
<th>Preclinical</th>
<th>Phase I</th>
<th>Phase II</th>
<th>Phase III</th>
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<tbody>
<tr>
<td>Archexin</td>
<td>Akt1-Inhibitor</td>
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<tr>
<td>RX-3117</td>
<td>DNA Synthesis Inhibitor</td>
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<tr>
<td>RX-5902</td>
<td>P68 RNA Helicase Inhibitor</td>
<td></td>
<td></td>
<td></td>
<td>Partnered</td>
</tr>
<tr>
<td>Archexin-N</td>
<td>Akt1-inhibitor/improved delivery</td>
<td></td>
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<td>RX-21101</td>
<td>Microtubule Inhibitor</td>
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<tr>
<td>RX-0047-N</td>
<td>HIF-1 Alpha Inhibitor</td>
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</tbody>
</table>
New and Experienced Management Team

- **Peter D. Suzdak Ph.D., (CEO)**
  - CEO as of February 2013
  - Over 28 years of experience in pharmaceutical industry
  - Formerly at Corridor Pharma, Cardioxyl Pharma, Guilford Pharmaceuticals, Novo-Nordisk A/S, NIH, Pfizer

- **Rick Soni, M.B.A., (President & COO)**
  - Over 25 years of experience in pharmaceutical industry
  - Formerly at Otsuka America Pharmaceuticals, Novartis, and Schering Plough

- **Ted Jeong, D.Mgt., (Sr. VP & CFO)**
  - Over 16 years of experience in capital raising and investment
  - Formerly at Hyundai Venture Investment Corporation
Archexin: Best-in-Class Akt-1 Inhibitor

**Mechanism**
- Inhibitor of the protein kinase AKT-1
- Involvement in tumor cell growth, survival and angiogenesis
- Inhibition of AKT-1-mediated drug resistance

**Clinical Development**
- Pancreatic cancer-Phase IIa completed
- Phase II trials in Chemo-resistant solid tumors and Hematological malignancies to begin in 2H13

**Advantages**
- Targeting a major signal system
- Excellent safety profile in humans
- Orphan designations for 5 cancers (pancreatic cancer, ovarian cancer, stomach cancer, RCC, glioblastoma)

**Patent**
- Patent expires in 2025
Archexin’s Attractive Commercial Opportunity

**Targeted Oncology Market**

- **2008**: $25 B
- **2015 Est**: $51 B
- **Increase**: 104%

**ARCHEXIN** is:

- Well **POSITIONED** to address unmet medical needs in **Pancreatic**, **Ovarian** and **Stomach cancer**, **Renal cell carcinoma**, **Glioblastoma** (all orphan drug designation granted by the FDA), **Prostate** and **Hematological** malignancies.
- **EFFECTIVE** in combination with gemcitabine – reducing risk and safety concerns – increased efficacy.
- A **NOVEL** modality, **EASY** to manufacture and has a follow-on targeted nano-formulation that will afford **INCREASED** life-cycle management.

- Decision Resources, Feb 2010 – targeted oncology market report.
- Markets covered: United States, France, Germany, Italy, Spain, United Kingdom, Japan.
- Diseases included: Actinic keratosis, basal cell carcinoma, breast cancer, CML, CRC, erythema nodosum leprosum, esophageal cancer, GISTs, glioma, glioblastoma multiforme, head and neck cancer, hormone-refractory prostate cancer, thyroid cancer, melanoma, multiple myeloma, myelodysplastic syndromes, non-Hodgkin’s lymphoma, NSCLC, osteosarcoma, ovarian cancer, pancreatic cancer, prostate cancer, RCC, sarcoma.
Target: AKT1

- Significant increase in the activated form of AKT1 (Phosphorylated-AKT) in cancer cells
- Results in increased tumor cell growth/size, proliferation, survival, neo-vascularization and resistance to cytotoxic agents

Archexin selectively blocks the native and activated forms of AKT1
Archexin: Phase I Clinical trial (completed)

- Phase I objective
  - To determine maximum tolerated dose, safety and pharmacokinetic profiles

- Phase I results:
  - MTD was 315 mg/m²/d in Patients with an advanced cancer after up to two cycles of treatment
  - The dose limiting toxicity was Grade 3 fatigue; no significant hematological abnormalities

- Phospho-AKT1 being developed as a clinical biomarker

Archexin: Phase IIa Study in Metastatic Pancreatic Cancer (completed)

Archexin in combination with gemcitabine was safe, well-tolerated and demonstrated preliminary signs of efficacy in patients with advanced pancreatic cancer

- Open label 2-stage study to assess the safety and efficacy of Archexin in combination with gemcitabine
- 31 subjects enrolled (10 for safety, 21 for efficacy) with ages ranging 18-65 years with metastatic pancreatic cancer
- Archexin in combination with gemcitabine provided a median survival of 9.1 months compared to the historical survival data of 5.65 months (Burris et al., 1997, J. Clin Oncol 15:2403) for standard single agent gemcitabine therapy
- Most frequently reported adverse events include constipation, nausea, abdominal pain, and pyrexia, regardless of relatedness
Archexin: Potent anti-proliferative effects against cancer cell lines expressing activated AKT1

- Archexin potently inhibits the growth of cancer cell lines containing activated-AKT1
- Board spectrum of potential clinical utility

<table>
<thead>
<tr>
<th>Cell line</th>
<th>Types of cancer cells</th>
<th>IC₅₀ (nM) ± SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>U251</td>
<td>Brain</td>
<td>5.0 ± 1.2</td>
</tr>
<tr>
<td>MCF-7</td>
<td>Breast</td>
<td>20.0 ± 0.45</td>
</tr>
<tr>
<td>HeLa</td>
<td>Cervix</td>
<td>12.0 ± 0.93</td>
</tr>
<tr>
<td>HT-29</td>
<td>Colon</td>
<td>42.0 ± 13.0</td>
</tr>
<tr>
<td>Caki-1</td>
<td>Kidney</td>
<td>25.7 ± 0.61</td>
</tr>
<tr>
<td>UMRC-2</td>
<td>Kidney</td>
<td>15.0 ± 1.6</td>
</tr>
<tr>
<td>HepG2</td>
<td>Liver</td>
<td>19.0 ± 4.8</td>
</tr>
<tr>
<td>A549</td>
<td>Lung</td>
<td>6.7 ± 1.3</td>
</tr>
<tr>
<td>OVCAR-3</td>
<td>Ovary</td>
<td>3.3 ± 0.72</td>
</tr>
<tr>
<td>PANC-1</td>
<td>Pancreas</td>
<td>28.0 ± 0.98</td>
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<tr>
<td>PC-3</td>
<td>Prostate</td>
<td>18.0 ± 4.25</td>
</tr>
<tr>
<td>Lox-IMVI</td>
<td>Skin</td>
<td>18.0 ± 3.3</td>
</tr>
<tr>
<td>MKN-45</td>
<td>Stomach</td>
<td>6.4 ± 1.4</td>
</tr>
</tbody>
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Archexin: Clinical Development Plan

- Expand Phase II program to include additional cancer types with increased activated AKT1
  - Initiate Phase IIa clinical trials in:
    - Chemo-resistant solid tumors (e.g. ovarian, colon)
      - Initiate study in 2H13
      - Complete study in 4Q14
    - Hematological malignancies (e.g. multiple myeloma, lymphoma)
      - Initiate study in 2H13
      - Complete study in 4Q14
RX-3117
(Partnered with Teva)
RX-3117: Best-in-Class Antimetabolite Nucleoside

**Mechanism**
- Inhibition of DNA synthesis
- Induction of apoptotic cell death
- Activated by UCK, which is different from gemcitabine

**Current and Future Indications**
- Solid tumors: pancreas, NSCLC, colon, renal and other solid tumors

**Advantages**
- Better efficacy and safety than gemcitabine in animal models
- Activity against gemcitabine-resistant cancer cells
- Better PK than gemcitabine: longer half-life, oral route
- Potential market leader in gemcitabine market

**Patent**
- Patent expires in 2024

**Clinical Development**
- Completed exploratory clinical trial in patients for oral bioavailability, safety and PK
- IND filing and initiation of Phase I in 2H13 (Teva)
RX-3117: Partnership with Teva

- Commercialization and development agreement

- $9.126 million financing received
  - Teva owns 6.3% of Rexahn as a result of equity investment
  - Share price of 120% market premium

- Future milestones on development and regulatory advancement, and royalties

- Recent funding for Phase I package preparation in 2012 was completed and additional milestone payment expected in 2013
RX-5902
RX-5902: Best-in-Class p68 Helicase Inhibitor

Mechanism
- Inhibition of p68 RNA helicase
- Blocks upregulation of cancer related genes

Current and Future Indications
- Solid tumors: pancreas, NSCLC, colon, renal and other solid tumors

Advantages
- Anti-proliferative effects
- Synergistic with cytotoxic agents
- Efficacy against drug resistant cancer cells
- Orally bioavailable

Patent
- Patent expires in 2025

Clinical Development
- IND filed
- Phase I clinical trail to start in June
RX-5902’s Attractive Commercial Opportunity

RX-5902 is:

**EFFECTIVE** against most difficult cancers - Melanoma, Renal Cell Carcinoma, Ovarian and Pancreatic cancer (fastest growing drug-treatable pool populations*)

**EFFECTIVE** against multi-drug resistance, based on resistance reversing effects in drug-resistant cancer cells

**EFFECTIVE** as a combination therapy - growth inhibition of cancer cells in combination with leading anticancer drugs

**CONVENIENT** - Oral availability will increase patient compliance

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RX-5902: Mechanism of action Summary

- Phosphorylated p68 is highly expressed in cancer cells (not in normal cells)
- Results in upregulation of cancer related genes
- Resulting in cancer cell proliferation/tumor growth
- RX-5902 Selectively blocks Phosphorylated p68
  - Decreased proliferation/growth of cancer cells
  - Synergism with cytotoxic agents
  - Activity against drug resistant cancer cells

Upregulation of Cyclin D1, C-jun and C-myc

Cancer cell Proliferation/Tumor growth
RX-5902: Potent anti-proliferative effects against cancer cell lines expressing phospho-P68

RX-5902 inhibited proliferation of human cancer cells at nanomolar concentrations, with IC$_{50}$ values ranging from 11 nM to 21 nM

<table>
<thead>
<tr>
<th>Cell Line</th>
<th>Tissue</th>
<th>IC$_{50}$ (nM)</th>
</tr>
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<tbody>
<tr>
<td>Caki-1</td>
<td>Kidney</td>
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</tr>
<tr>
<td>MDA-MB-231</td>
<td>Breast</td>
<td>12</td>
</tr>
<tr>
<td>OVCAR-3</td>
<td>Ovary</td>
<td>12</td>
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<tr>
<td>UMRC-2</td>
<td>Renal cell</td>
<td>13</td>
</tr>
<tr>
<td>U251</td>
<td>Brain</td>
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<tr>
<td>NCI-H226</td>
<td>Lung</td>
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<tr>
<td>HepG2</td>
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<td>HCT-116</td>
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<td>SNB-19</td>
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<tr>
<td>SK-MEL-28</td>
<td>Melanoma</td>
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<tr>
<td>MKN-45</td>
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</tr>
<tr>
<td>HeLa</td>
<td>Cervix</td>
<td>21</td>
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All the cell lines were tested for p68 and Phosphorylated p68 expression - correlates with high sensitivity of cell lines to RX-5902
RX-5902: Effective against Multi Drug Resistant (MDR) Cancer Cells

RX-5902 may be an effective alternative against multi-drug resistance

Resistance Index=(IC50 at drug-resistant cell ) / (IC50 at non-resistant cell ). Lower RI implies greater efficacy against drug resistant cancer cells
RX-5902: Synergistic Activity with Cytotoxic Drugs

RX-5902: Initiation of Phase I Clinical Trial

- IND filed

- Phase I study:
  - Dose escalation study in patients with solid tumors
  - Determine safety, tolerability and pharmacokinetics following oral administration
  - Dose expansion
  - Complete in 4Q14
Timeline of Milestones for 2013/2014

**2013**
- First patient dosed with RX-5902
- Teva files RX-3117 IND
- Archexin: Initiate solid tumor study
- Archexin: Initiate Hematological malignancy study
- Teva doses first patient with RX-3117 *
- Archexin: Complete solid tumor study *
- Complete RX-5902 study *
- Archexin: Complete Hematological malignancy study *

**2014**
* Clinical events that have the potential to increase the shareholder value
# Financial Highlights

<table>
<thead>
<tr>
<th>Rexahn Financial Highlights</th>
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<tbody>
<tr>
<td>Ticker</td>
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<tr>
<td>Exchange</td>
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<tr>
<td>Market Price (3/15/13)</td>
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<tr>
<td>Market Capitalization (3/15/13)</td>
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<tr>
<td>Shares Outstanding</td>
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<td>Insider Ownership</td>
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<td>Cash Balance (12/31/12)</td>
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<tr>
<td>Monthly Est. Cash Burn</td>
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Revolutionizing the Treatment of Cancer

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