Revolutionizing the Treatment of Cancer
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 medical 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 filed IND and Phase I clinical development will be initiated in 2H13
- **Supinoxin (RX-5902)**: p68 RNA Helicase inhibitor starting Phase I clinical trial in solid tumors

Partnership with Teva Pharmaceuticals for RX-3117

Rapidly advancing pipeline: Initiating four clinical trials in 2013 with data in 2014

Nano-Polymer-Drug Conjugate System (NPDCS)

Strong Intellectual Property position
## Deep Oncology Pipeline

<table>
<thead>
<tr>
<th>Drug Candidate</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>Supinoxin™ (RX-5902)</td>
<td>p68 RNA Helicase Inhibitor</td>
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<tr>
<td>RX-21101</td>
<td>Microtubule Inhibitor</td>
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<td>Archexin-N</td>
<td>Akt1 inhibitor/improved delivery</td>
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<td>RX-0047-N</td>
<td>HIF-1 Alpha Inhibitor</td>
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</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 Akt1 Inhibitor

- **Mechanism**
  - Inhibitor of the protein kinase Akt1
  - Involvement in tumor cell growth, survival and angiogenesis
  - Inhibition of Akt1-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

**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-Akt1) 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 250 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>IC$_{50}$ (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>
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<td>HT-29</td>
<td>Colon</td>
<td>42.0 ± 13.0</td>
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<tr>
<td>Caki-1</td>
<td>Kidney</td>
<td>25.7 ± 0.61</td>
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<tr>
<td>UMRC-2</td>
<td>Kidney</td>
<td>15.0 ± 1.6</td>
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<td>HepG2</td>
<td>Liver</td>
<td>19.0 ± 4.8</td>
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<tr>
<td>A549</td>
<td>Lung</td>
<td>6.7 ± 1.3</td>
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<tr>
<td>OVCAR-3</td>
<td>Ovary</td>
<td>3.3 ± 0.72</td>
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<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>
</table>
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 Pharmaceuticals)
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 administration
- Potential market leader in gemcitabine market

**Patent**
- Patent expires in 2024

**Clinical Development**
- Completed exploratory clinical trial in cancer patients for oral bioavailability, safety and pharmacokinetics
- Teva filed IND (July 2013) and anticipates initiation of Phase I in 2H13
RX-3117: Partnership with Teva

- Commercialization and development agreement
- $9.126 million financing received
  - Teva owns 5.6% of Rexahn as a result of equity investment
  - Share price of 120% market premium
- Future milestones on development and regulatory advancement, and royalties
- Funding for Phase I package preparation in 2012 was completed and additional milestone payment expected in 2013
Supinoxin: 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 be initiated
Supinoxin’s Attractive Commercial Opportunity

Supinoxin 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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*Targeted Oncology Market*

- Billion USD

<table>
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<tr>
<th>Year</th>
<th>Value</th>
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<tbody>
<tr>
<td>2008</td>
<td>$25 B</td>
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<tr>
<td>2015 Est</td>
<td>$51 B</td>
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Supinoxin: 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
- Supinoxin 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
Supinoxin: Potent anti-proliferative effects against cancer cell lines expressing phospho-P68

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

<table>
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<tr>
<th>Cell Line</th>
<th>Tissue</th>
<th>IC$_{50}$ (nM)</th>
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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>
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<tr>
<td>OVCAR-3</td>
<td>Ovary</td>
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<tr>
<td>UMRC-2</td>
<td>Renal cell</td>
<td>13</td>
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<tr>
<td>U251</td>
<td>Brain</td>
<td>15</td>
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<tr>
<td>NCI-H226</td>
<td>Lung</td>
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<td>HepG2</td>
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<tr>
<td>HCT-116</td>
<td>Colon</td>
<td>19</td>
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<tr>
<td>SNB-19</td>
<td>Brain</td>
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<tr>
<td>SK-MEL-28</td>
<td>Melanoma</td>
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</tr>
<tr>
<td>MKN-45</td>
<td>Stomach</td>
<td>20</td>
</tr>
<tr>
<td>HeLa</td>
<td>Cervix</td>
<td>21</td>
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</table>

All the cell lines were tested for p68 and Phosphorylated p68 expression - correlates with high sensitivity of cell lines to Supinoxin
Supinoxin: Effective against Multi Drug Resistant (MDR) Cancer Cells

**Supinoxin may be an effective alternative against multi-drug resistance**

Resistance Index=(IC$_{50}$ at drug-resistant cell ) / (IC$_{50}$ at non-resistant cell ). Lower RI implies greater efficacy against drug resistant cancer cells.

**Taxol resistant colon cancer cells**

- RX-5902: 0.59
- Docetaxel: 21.76

**Cisplatin resistant ovarian cancer cells**

- RX-5902: 0.35
- Cisplatin: 4.69

**Gemcitabine resistant ovarian cancer cells**

- RX-5902: 0.54
- Gemcitabine: 6250

**Gemcitabine resistant lung cancer cells**

- RX-5902: 2.63
- Gemcitabine: 40.31
Supinoxin: Synergistic Activity with Cytotoxic Drugs

Supinoxin: Initiation of Phase I Clinical Trial

- IND filed
- Phase I study will be initiated in 3Q13
- Phase I study design:
  - Dose escalation study in cancer patients with solid tumors
  - Determine safety, tolerability, pharmacokinetics and preliminary efficacy following oral administration
  - Dose expansion
  - Complete in 4Q14
Nano-Polymer-Drug Conjugate System (NPDCS)

- Combines existing chemotherapeutic agents with a proprietary polymer carrier that contains a signaling moiety which directs the drug directly into the tumor
  - Minimizes the levels of freely circulating drug thereby reducing potential adverse events
  - Maximizes accumulation of drug in the tumor thereby increasing anti-tumor activity

- NPDCS is a broad platform that has the potential to generate multiple drug candidates going forward

- First drug candidate: RX-21101, a polymer conjugated form of docetaxel
  - Preclinical studies demonstrated increased efficacy and reduced toxicity, as compared to intravenously administered free docetaxel.
Corporate Overview
Milestones | Highlights
Timeline of Milestones for 2013/2014

2013

- Teva files RX-3117 IND
- First patient dosed with Supinoxin™ (RX-5902)
- Archexin®: Initiate solid tumor study
- Archexin®: Initiate Hematological malignancy study
- Teva doses first patient with RX-3117

2014

- Complete Supinoxin™ (RX-5902) study
- Archexin®: Complete solid tumor study
- Archexin®: Complete Hematological malignancy study
## Rexahn Financial Highlights

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<table>
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<tbody>
<tr>
<td><strong>Ticker</strong></td>
<td>RNN</td>
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<tr>
<td><strong>Exchange</strong></td>
<td>NYSE MKT</td>
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<tr>
<td><strong>Market Price (7/26/13)</strong></td>
<td>$0.53</td>
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<td><strong>Market Capitalization (7/26/13)</strong></td>
<td>$71 MM</td>
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<td><strong>Shares Outstanding (7/26/13)</strong></td>
<td>133.7 MM</td>
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<td><strong>Insider Ownership</strong></td>
<td>10%</td>
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<td><strong>Cash Balance (3/31/13)</strong></td>
<td>$13 MM</td>
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<tr>
<td><strong>Monthly Est. Cash Burn</strong></td>
<td>$0.9 MM</td>
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Revolutionizing the Treatment of Cancer

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