Developing Disruptive Therapeutics for the Treatment of Pancreatic Diseases

November 2016
Forward Looking Statements Disclaimer

Certain statements in this presentation are forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 and are provided under the protection of the safe harbor for forward-looking statements provided by that Act. Forward-looking statements are based on current expectations of future events and often can be identified by words such as “anticipates,” “believes,” “estimates,” “expects,” “future,” “intends,” “plans,” “project,” “target,” or other words of similar meaning or the use of future dates. Examples of forward-looking statements in this presentation include statements regarding the safety, effectiveness and benefits of SBP-101; the timing of enrollments in and completion of our Phase 1 clinical trial for SBP-101; anticipated submission and acceptance of an IND for pancreatitis by the US FDA; potential business opportunities; future fundraising or capital requirements; and expected financial or operating results. Uncertainties and risks may cause our actual results to be materially different than those expressed in or implied by our forward-looking statements. Such uncertainties and risks include, among others, risks associated with our Phase 1 clinical trial for SBP-101, including administration, enrollment, completion and results; safety and efficacy of our drug candidates; regulatory requirements and changes; the availability of and requirements for financial and other resources necessary to execute our business plans; difficulties maintaining and obtaining key personnel, competitive conditions in our primary market; and our ability to establish and protect our intellectual property rights. More detailed information on these and other factors that could affect our actual results are described in our SEC filings, most recently in our Quarterly Report on Form 10-Q for the quarter ended September 30, 2016. We encourage you to consider all of these risks, uncertainties and other factors carefully in evaluating the forward-looking statements contained in this presentation. The forward-looking statements provided in this presentation speak only as of the date of this presentation and, except to the extent required by law, we undertake no obligation to update any forward-looking statement because of new information, future events or other factors.
Sun BioPharma, Inc. - Highlights

- Pancreatic ductal adenocarcinoma (PDA) and pancreatitis are large, urgent, unmet medical needs with very limited treatment options
- SBP-101 exploits natural affinity of exocrine pancreas for polyamines
- SBP-101 - a polyamine analogue:
  - Alters polyamine metabolism by exocrine pancreas
  - Disrupts normal polyamine metabolic process leading to programmed cell death (apoptosis)
- Natural selectivity minimizes toxicity to islet cells and other non-target tissues
- Compelling, published, pre-clinical evidence for a potential major advance as both a stand-alone therapy and 1st line combination therapy for pancreatic cancer
- IND accepted by FDA Q3 2015 for PDA – third cohort enrollment complete – Q3 2016
- Strong relationships with top-tier KOLs and leading pancreatic disease institutions
- Experienced management team with history of value creation

New Synthetic Polyamine Selectively Targets Pancreas
Executive Management Team

Michael T. Cullen, MD, MBA - Co-Founder and Executive Chairman
  o MGI Pharma, GD Searle, SunPharm, Omnicare, 3M

David B. Kaysen - CEO & Director
  o Uroplasty, Rehabilicare, Diamedics Medical

Scott Kellen - VP of Finance & CFO
  o Kips Bay Medical, Transoma Medical, ev3 Inc., Deloitte & Touche

Suzanne Gagnon, MD - Chief Medical Officer & Director
  o ICON, Rhone Poulenc Rorer (Sanofi), Omnicare, Luitpold Pharmaceuticals

Thomas X. Neenan, PhD - Co-Founder & Chief Scientific Officer
  o Sideris, Genzyme, GelTex Pharmaceuticals

✓ 10+ FDA drug approvals, hematology/ oncology success.
✓ 10-20+ year relationships of CMC, pharmacology, toxicology, regulatory, clinical, operations, program mgmt, writing, mfg ops and business team leadership.
✓ 20+ years of public markets and shareholder value creation experience.

Demonstrated Track Record of Value Creation
Market Opportunity

- **Pancreatic cancer – US 53,000 cases/year**
  - High unmet need due to high mortality and short life expectancy
  - 95% *pancreatic ductal adenocarcinoma (PDA)*
  - 7% 5-year survival rate
  - *Current Rx Median Survival Benefits*
    - 6 weeks, 10 days, 7 weeks, 16 weeks

- **Pancreatitis – no organ-specific Rx**
  - Acute – 300,000 US hospitalizations/year
  - Chronic – 30,000 US hospitalizations/year
  - Direct annual cost of ~ $3 billion
  - ~20% of cases moderate or severe
  - 2-5% mortality rate


### Top Five Cancer Deaths: USA 2016

<table>
<thead>
<tr>
<th>Type</th>
<th>Incidence*</th>
<th>Deaths*</th>
<th>5-year Survival#</th>
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<tbody>
<tr>
<td>Lung</td>
<td>224,390</td>
<td>158,080</td>
<td>17.7%</td>
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<tr>
<td>Colon</td>
<td>134,490</td>
<td>49,190</td>
<td>65.1%</td>
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<tr>
<td>Pancreas</td>
<td>53,070</td>
<td>41,780</td>
<td>7.7%</td>
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<tr>
<td>Breast</td>
<td>246,660</td>
<td>40,450</td>
<td>89.7%</td>
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<tr>
<td>Prostate</td>
<td>180,890</td>
<td>26,120</td>
<td>98.9%</td>
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- Estimates for 2016 based upon 2009-2013 data
Mechanism of Action SBP-101: Disruption of Key Polyamine Metabolic Processes

- SBP-101 is an analogue of a naturally occurring polyamine (PA)
- Increased PA levels and their synthetic enzymes found in pancreatic ductal adenocarcinoma (PDA) cells
- PA uptake mechanism up-regulated / accelerated in PDA cells
- SBP-101 produces an excess of “pseudo-polyamines” disrupting normal metabolic process
- Excess “pseudo-PA” inhibits production of enzymes and triggers programmed cell death (apoptosis)

Fundamentally Different Approach to Affect Pancreatic Cancer
Preclinical studies show:

- SBP-101 levels in pancreatic tissue 50x > effective anti-tumor levels demonstrated in-vitro
- Exocrine pancreatic atrophy
- No inflammatory response
- Preservation of islets with normal blood glucose levels
- Lower SBP-101 levels in other organs – limiting non-pancreatic toxicity

Pancreatic Ductal Adenocarcinoma: Sustained dosing over time induces programmed cell death in cells of exocrine pancreas

Pancreatitis: Limiting the amount and duration of dosing reversibly inhibits production of digestive enzymes which cause pancreatitis
Mechanism of Programmed Cell Death

Apoptosis via Caspase 3 activation: Exocrine Pancreas

Exocrine Pancreas Specific, Combo Potential

- Exocrine Pancreas specific effect
  - Injectable (sc) sustained dosing has cumulative effect which induces programmed cell death in exocrine pancreas (acinar/ductal cells)
  - No effect on islet cells or insulin/glucose levels, glucose tolerance tests

- Minimal potential for drug interactions
  - No protein binding
  - No hepatic (liver) enzyme induction or inhibition

- Anticipate good safety profile and no chemotherapy-type side effects
  - Avoids bone marrow suppression, nausea, vomiting, neuropathy, diarrhea, sepsis
  - Reversible transaminitis, GI motility impairment
  - Successfully progressed through first 3 cohorts in Phase 1 safety study

Selective Uptake Enhances Safety Profile, Enables Rx Combinations
Pancreatic Cancer:

- US Orphan Drug status granted Q3 2014
- FDA IND accepted for Phase 1 study - Q3 2015
- Australian HREC/TGA accepted CTN Q4 2015
- Completed first patient cohort Q2 2016
- Completed third patient cohort enrollment Q3 2016
- Five centers recruiting patients – protocol shortened in Q2 = faster movement through cohorts
- Expect impact on key biomarker – Possibly Cohort #5 or 6

Pace of Trial Accelerating & Orphan Drug Status for PDA
SBP-101 Phase 1 Trial Progress – Cohort Times

2016

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<thead>
<tr>
<th>January</th>
<th>February</th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>August</th>
<th>September</th>
<th>October</th>
<th>November</th>
<th>December</th>
</tr>
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<tr>
<td>Cohort #1: (4.7 months)</td>
<td>Cohort #2: (2.8 months)</td>
<td>Cohort #3: (1.7 months)</td>
<td>Cohort #4: tbd</td>
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Pace of Trial Accelerating
SBP-101 in Pancreatic Cancer

- Preclinical studies show both **superior efficacy** of SBP-101 by itself and **additive efficacy** in combination with standard Rx*
- Compelling data in 6 human cancer cell lines
- 3 different *in vivo* xenograft models
- Standard Rx* toxicity not expected with SBP-101: avoids bone marrow suppression, nausea, vomiting, neuropathy, diarrhea, sepsis
- **SBP-101 combination potential**
  - Additive efficacy
  - No overlapping toxicity
  - No drug interaction

Evidence Suggests Safety, Efficacy & Potential for Combination Rx

*gemcitabine and nab-paclitaxel*
Maximum % growth inhibition (mean±SE) at 96 hours with 10 µM SBP-101 alone and in combination with gemcitabine and/or nab-paclitaxel in 6 human pancreatic cancer cell lines

Source: Baker CB et al Pancreas 2015;44(8) 1350
Near Complete Tumor Growth Inhibition: PANC-1 Human Pancreatic Cancer in Mouse Model

Source: Charles River, Ann Arbor BERG20100R1a(MIR1581)
L3.6pl Pancreatic Tumor Volume after Treatment with SBP-101 and/or Gemcitabine in Nude Mice

*P<0.05, compared to gemcitabine alone

Source: Baker CB et al, AACR 2014
**BxPC-3 Xenograft  SBP-101 +/- GEM* & NAB**

![Graph](image)

**Group 1 = Vehicle**
**Group 2 = SBP 5x/week**
**Group 3 = SBP 3x/week**
**Group 4 = SBP+GEM**
**Group 5 = SBP+NAB**
**Group 6 = SBP+GEM+NAB**
**Group 7 = GEM+NAB**

*GEM = gemcitabine, **NAB = nab-paclitaxel*

SBP-101 in Healthy Beagles

- Protocol: 4.3mg/kg/day x 14 days
- Repeated exposure to SBP-101 produced a pharmaceutical Total Pancreatectomy with Islet Cell Auto Transplantation (“TP-IAT”)
  - Exocrine pancreatic atrophy
    - Cumulative dose
    - Latent (delayed) effect
    - Exocrine pancreatic insufficiency (“EPI”)
- No inflammatory response
- Preservation of islets with normal blood glucose levels

SBP-101 Successfully Induced Acinar Cell Atrophy
Gross Morphology of Beagle Pancreata Excised at Necropsy

- Panel A: Untreated control dog.
- Panels B and C:
  - Dogs received 4.3 mg/kg/day SBP-101 x 14 days
  - Sacrificed on days 57 and 61, respectively.
Impact of SBP-101 on Dog Pancreas (H&E Stain)

An H&E-stained section from the pancreas of an untreated dog (A) exhibits well formed acini comprised of pyramidal epithelial cells with a clear apical portion and a darker base. In contrast, an H&E-stained section from the pancreas of a dog treated with SBP-101 (B) demonstrates a highly disrupted exocrine architecture with smaller lobules containing atrophic and vacuolated acinar cells. The treated dog was given SBP-101 SC at a dose of 4.3 mg/kg/d x 14 d and sacrificed 61 d post-last dose. Original magnification × 250.
No Impact on Canine Serum Glucose

SBP-101 preserved endocrine function
**Glucose Tolerance Test in Dogs** (4.3 mg/kg SC for 14 d)

Blood Glucose (mg/dl) vs. Time (minutes)

- **Baseline**
- **7 Weeks Post-drug**

Glucose Tolerance Unchanged 7 Weeks After Dosing
Physician Collaborators

- Dan Von Hoff, M.D. - TGen/Mayo Clinic, Scottsdale, AZ
- James Abbuzzese, M.D. – Duke Cancer Institute, Durham, NC
- David Goldstein, M.D. – Prince Henry & Prince of Wales Hospital, Sydney, Australia
- Ashok Saluja, Ph.D.* - Laboratory U of Miami**
  - Mechanism of action (MOA) pancreatic cancer
  - Pancreatitis Models
- Steve Pandol, M.D.* – Laboratory Cedars-Sinai
  - Human acinar cells, Pancreatitis models

* American Pancreatic Association Past President
** formerly U of Minnesota Surgery Department lab

“Our team at the University of Miami is excited about the opportunity to work with the compound SBP-101. The compound’s novel mechanism of action is showing promise as a candidate for the largely unmet medical needs pertaining to the treatment of pancreatic cancer and pancreatitis.”

-Dr. Ashok Saluja

Enthusiastically Supported by Leading Pancreatic KOLs
Institutional Collaborators

Research Partners:

Clinical Sites - US:

Clinical Sites - Australia:

World Renowned Research and Clinical Institutions
Sun BioPharma Inc. Intellectual Property

**Issued Patent:**
- **US Patent No 6,160,002** is a method of use patent that covers the use of SBP-101 for the chemical resection of the exocrine portion of the pancreas, issued on December 12, 2000, expiring on July 19, 2019 (licensed from the University of Florida)

**Patent Pending:**
- U.S Patent Application No. 62/238,916 is a method application covering the use of SBP-101 to treat pancreatitis

**US Orphan Drug Status**
- Granted 2014 for pancreatic cancer (7 years market exclusivity) and anticipated in EU & Japan (10 and 7 years, respectively; clock does not start until marketing authorization)

Patents and Orphan Drug Designation Provide Substantial Protection
Sun BioPharma Inc. Corporate Overview

- Founded September 2011 to license SBP-101 from Dr. Raymond Bergeron’s laboratory at University of Florida
- Dr. Bergeron is globally recognized scientist with a record of value creation; technology enabled 2 company acquisitions:
  SunPharm/GelTex (Genzyme - $1.1B) & Ferrokin Biosciences (Shire - $325M)
- HQ in Minneapolis, MN with subsidiary in Australia
- $13.5 million raised to date from accredited investors
- IND accepted by FDA Phase 1 cancer study 2015; patients enrolled US/AUS 2016
- Publicly traded - quoted on OTCQB under ticker “SNBP”

Significant Progress from UF Lab: Bench to Bedside
Milestones – PDA & Pancreatitis

- Phase 1 pancreatic cancer study opened:
  Australia – January 2016
  U.S. – July 2016

- Expected impact on key biomarker – Q1 2017

- Phase 1a cancer safety data available – Q2 2017

- IND submission for pancreatitis – Q2 2017

- IND acceptance for pancreatitis – Q3 2017

- FPI pancreatitis phase 1 clinical – Q4 2017

- Early data signal on pancreatitis – Q2 2018

Multiple Clinical Data Events Expected to Support News Flow
Thank You!