SIGNPATH PHARMA INC

INTRODUCTORY OVERVIEW AND PRESENTATION

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OVERVIEW

- ***SignPath Pharma is a clinical stage biotechnology company. It focuses on creating heart safe versions of drugs which cause cardiotoxicity.***
- ***SignPath's proprietary technology provides a solution to the most serious drug safety issue in the world (cardiac safety.)***
  - Funding to date:
    - Raised upwards of $17 million through several "friends and family" rounds
    - No outstanding debt
  - Broad IP portfolio with many issued patents prevents competition
  - Delaware C Corp
  - Operates as an efficient "Virtual" company using outsourcing and contracted labs

PROBLEM: DRUG INDUCED CARDIAC SIDE EFFECTS

- ***Arrhythmia caused by drugs:***
  - **Leading cause of failure at every stage of drug development**
  - Over 150 FDA approved drugs with this problem, including anti-cancer agents, antibiotics, antipsychotics, antihistamines and other drugs. Many of these drugs are dose limited by cardiac safety.
  - Numerous pipeline drugs are stalled due to cardiac toxicities. Estimated that over 1/3 of drugs in development fail due to cardiac safety.

- ***Cardiomyopathy caused by cancer chemotherapy:***
  - Cardiac toxicity that can permanently damage the heart muscle and damage to other organs
  - Prevents proven effective chemotherapy treatments from continued use
  - Cardiomyopathy leads to reduced cumulative dose or temporary cessation of chemotherapy for many patients.

CARDIAC ANSWER: SPP4040

- ***SPP4040 has prevented arrhythmia more than 35 well known problem drugs***
- ***There is a 90% correlation between the animal models and human results for drugs impacting QT interval. Scientific risk is low.***
- ***SPP4040 has shown protection against cardiotoxicity with chemotherapy regimens that otherwise result in significant cardiomyopathy.***
- ***SPP4040 has been through several development iterations to achieve:***
  - Oral administration
  - Non-toxic even at high dosage (chronic dosing at 800x clinical dose)
  - Does not reduce or impact efficacy of target drug
  - Effective within minutes
  - 6 to 8 hour effectiveness after single dose
  - 100mg dosage for adult male. This will allow co-formulation with target drugs

SPP4040 MARKET POTENTIAL

- ***Very large market of drugs which are limited by cardiac arrhythmia***
  - More than 150 FDA approved drugs with arrhythmia problems
  - Hundreds more drugs stalled in development because of arrhythmia
- ***The potential addressable market is tens of billions of dollars. Examples include:***
  - Risperidone: Peak Sales $4.7 billion
  - Citalopram: Peak Sales $1.7 billion
  - Escitalopram: Peak Sales $2 billion
  - Ondansetron: Peak Sales $1.1 billion.
- ***The chemotherapy cardiomyopathy market is tremendous. Many chemotherapy regimens are cardiotoxic. Chemotherapy drugs which cause cardiomyopathy include:***
  - Sutent
  - Herceptin

SPP 4040 MARKET POTENTIAL continued

- ***SignPath's anti-arrhythmia strategy is to create second generation "heart safe" versions of drugs with proven efficacy.***
- ***Plans are to co-formulate and license SPP4040 with problem drugs. This maximizes potential revenue by:***
  - Saving drugs with markets limited by cardiotoxicity
  - Extending patent life of marketed drugs
  - Entering license agreements with drug companies developing drugs which are experiencing cardiac safety concerns.
- ***SignPath can also license it's proprietary CorreQT technology to companies who are facing obstacles in developing pipeline drugs due to cardiac safety issues.***

- ***SPP4040 clinical trials to begin in 2020.***

LIPOCURC™ (LIPOSOMAL CURCUMIN)

- ***LipoCurc is Signpath's first clinical application of its technology to address cardiotoxicity.***
  - Curcumin pro-arrhythmic side effects eliminated.
  - No cardiotoxicity observed in 70 human patients.
- ***LipoCurc has unique mechanisms of action, which allow for single agent activity, and synergy with other anti-cancer drugs.***
  - Clinical activity in human cancer
  - Kills cancer stem cells
  - Counteracts cancer related immunosuppression
  - Crosses the blood/brain barrier which allows for treatment of brain tumors
  - Observed efficacy in end-stage cancer patients who failed 6-7 prior treatments.
  - Accumulates preferentially (500x) in cancerous blood cells, which allows it to target blood cancers.
- ***LipoCurc has minimal toxicity.***

LipoCurc—PHASE II CLINICAL TRIAL TARGETS

- ***Glioblastoma*** This will be done at Johns Hopkins. Market size is over $3 billion despite the fact that there is currently no effective treatment

- ***Mesothelioma*** The Australian government is funding 100% of costs for Phase II testing. (Flinders University in Adelaide.) Market size is currently $340 million (no effective treatment)

- ***Multiple Myeloma*** Phase II site not yet finalized. Market size is expected to be $38 billion in five years

- ***Soft Tissue Sarcoma*** Phase II trials to be held at University of Nebraska. The global market size is expected to be $1.2 billion by 2023.

INTELLECTUAL PROPERTY PROTECTION

- ***Extremely Broad Patent Protection:***

- Numerous issued and pending patents protecting cardiac arrythmia and cardiomyopathy protection.
  - Patent position prevents competition in the field of mitigating arrhythmia using lipids and empty liposomes
  - Broad use patents, and specific composition of matter patents

- Patent protection on LipoCurc, with both composition of matter and method of use patents issued and pending.

CURRENT STAGE AND PRODUCT DEVELOPMENT

- ***SPP4040 Progress To Date***:
  - Proven successful with more than 35 drugs in animal testing
  - Animal studies show no toxicity
  - Planned trials will be relatively simple, quick, and inexpensive

- ***LipoCurc Progress To Date:***
  - Completed phase I trials in 70 humans.
  - End stage cancer patients who had failed 6-7 prior treatments showed dramatic decreases in their cancer markers and clinical benefit.

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