Inter-alpha Inhibitor Proteins (IAIP) 

Protein Replacement Therapy To Treat Systemic Inflammation
ProThera Biologics

Private, clinical stage, biologics company developing Inter-alpha Inhibitor Protein (IAIP) replacement therapy to reduce morbidity and mortality resulting from severe systemic inflammation

- Severe Sepsis
- Emerging Viral Pathogens/pandemics and Flu (e.g. Dengue, Ebola, SARS, Avian Flu)
- Bio-Terrorism (e.g. Anthrax)
- Other chronic/acute inflammatory diseases (Pre-term labor/eclampsia, Necrotizing enterocolitis, ESRD, Cystic Fibrosis)
**Inter-alpha Inhibitor Proteins (IAIP)**

Natural, circulating blood proteins; key element of innate immunity, modulate host response during systemic inflammation

- Multiple subunit protein – two principle forms
- High concentration in healthy individuals, rapidly depleted during disease processes
- Replacement Therapy demonstrated to effectively prevent and treat disease (seven different inflammatory model tested)
- IAIP has broad range of activity:
  - Inhibits serine proteases (HLE, cathepsin G, furin, etc)
  - Down-regulates pro-inflammatory cytokines (TNF-a, IL-6)
  - Blocks complement activation (C5a)
**Expected Benefits: IAIP Replacement Therapy**

- Natural blood product - low/no safety risks
- Strong and demonstrated efficacy
- No contraindications
- Universal therapy, i.e. not limited to one class of disease causing organisms
- “First line of Defense”- rapid acting and no need to ID the insult before deploying therapy
- Compliments other therapies
- Readily produced at low cost with local blood resource
- Robust, long shelf life, easily stored and deployed
**Business Strategy**

**SIRS/SEPSIS**
- Severe Infection
- Trauma/Injury

**BIODEFENSE**
- Anthrax
- Ebola Virus
- Ionizing Radiation
- Lung Injury

**Emerging Pathogens**
- Dengue
- Influenza Virus
- Avian Flu
- SARS

**OTHER INFLAMMATORY DISEASES**
- Necrotizing Enterocolitis in Neonates
- Preeclampsia/Pre-term labor
- Cystic Fibrosis
Key Team Members

- Yow-Pin Lim, M.D., Ph.D., Co-Founder, President/CSO & Director
- Douglas C. Hixson, Ph.D., Co-Founder and Director
- Richard A. Andrews, Chief Business Officer (Acting)
- Laura Bangs, Administrative Manager
- Richard Horan, Director
Markets, Commercial Opportunity

- Sepsis: $4.5B US and $11B WW
- Emerging Pathogens: $1.25B (Dengue) plus substantial upside driven by potential in new uses
- Biodefense: $500M
Results Expected

- Network of commercial partners focused on the sale of IAIP for the treatment of severe sepsis
- Select set of agreements/partnerships and collaborations in developing nations to treat pandemic viral disease
- Direct product sales to BARDA/Project Bioshield to protect US public from effects of biological attack
Principles of Financial Plan

- Significant and ongoing Non-Equity grant funding secured and planned
- Financial opportunity extraordinary and balanced by developments in three principle business sectors
  - Sepsis
  - Pandemic viral disease
  - Biodefense
- Financing Strategy: conservative approach focused on
  - Ongoing grant funds and Government supply contracts
  - Partnership revenue
  - Limited but critical venture investments
The Importance of Business Plans

- Clarity of purpose
- Focus on specific goals
- Realistic operational planning
- Gap assessment
- Risk awareness
- Consistency over time

Clear communication to investors and collaborators
Establishing a business plan

} Know your purpose and technology
} Realistic assessment of achievable goals
} Information
  • Competitors
  • Market
  • Technology
} Know your
  • Strengths, Weaknesses, Opportunities
  • Select strategic focus
  • Comprehensive assessment of operational and financial plan
  • Validate with advisors, board, thought leaders
Steps in building a plan

1. Assessment of Opportunity and fit with competitive situation---define what and why
2. Know your distinctive competitive advantage
3. Define how you will build on that
4. Define how you will protect it
5. Define how you will Finance it
6. DETAIL THE OPERATIONAL STEPS
7. Define how to critically track success