Oral Vectored Vaccines Administered by Room Temperature Stable Tablet

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Oral Non-Replicating Ad5 Co-Delivers Antigen and “Intestinal Adjuvant”

**NON REPLICATING ADENOVIRUS 5 (Ad5)**
- E1, E3 deleted
- Well Characterized
- Versatile

**DELIVERY VEHICLE**

**ADJUVANT**

(-“Vector-Based” Backbone)

**ANTIGEN**
(Disease-Specific)

**TLR3 AGONIST: dsRNA**
- Hardwired into the Ad5 Backbone
- Highly Expressed in Mucosal Epithelia of the Gut

**THE VAXART PLATFORM**

**VECTOR ADJUVANT COMBINATION**
- Suitable for Delivery of Any Recombinant Antigen
- Modular, Standardized Approach
- Adjuvant and Antigen are always co-delivered
- Minimal Systemic Exposure to Adjuvant
Tablet Delivers Active Ingredient to Small Intestine – Antigen and Adjuvant Are Co-Expressed

1. Enteric-Coated Tablet protects against stomach acid and delivers vaccine to small intestine.

2. Non-replicating Adenovirus 5 (Ad5) viral particle delivers antigen and adjuvant genes (the “Payload”) to mucosal epithelium for expression.

3. TLR3 signal activates immune cascade, targeting vaccine antigen.
Advantages of Oral Ad5 Vectored Platform

Advantages that are Common Across Vectored Vaccines

- **Versatility**
  - Suitable for delivery of virtually any Protein Antigen
  - Flu, HPV, Hep B, industry pipeline
  - Ebola, Marburg, CHIK, etc.

- **Speed, Manufacturability**
  - Rapid Construction
  - High Yield Process
  - Consistent across all Vaccines

- **Safety**
  - Recombinant protein
  - No need to work with pathogen

Advantages that are Unique to Vaxart Oral Ad5 Platform

- Vaxart Vaccines directly target Immune System of the Gut
  - Largest compartment

- Evades anti-vector issues
  - Responses are independent of pre-existing anti-Ad5 status
  - No/minimal anti-Ad5 responses

- TLR3 adjuvant activates broad and robust Immune Responses to Vaccine Antigen
  - Systemic Antibodies, T-Cells
  - Mucosal Antibodies
Room Temperature Stable Tablet Improves Acceptance and Eliminates Logistical Bottlenecks

Game Changer in Locations without Infrastructure

• No Needle
  – Patient Acceptance
  – Ease of Administration
  – No Needle Stick, Biohazard
  – Cultural Advantages

• No Cold Chain
  – Ease of Distribution
  – Logistics, Cost

VAXART TABLET VACCINE

Stability of Lot P815001A-1-A at 25°C

Stable at 25°C for up to 1 Year
  • Stable Refrigerated (5°C) for >> 1 Year
H1N1 Phase I Placebo-Controlled Studies

**DELIVERY SYSTEM**
Coated Tablets

**STUDY DESIGN**
Randomized, Double Blind, Placebo Controlled

<table>
<thead>
<tr>
<th>THREE DOSE LEVELS</th>
<th># SUBJECTS</th>
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<tbody>
<tr>
<td>Placebo, 1e9, 1e10</td>
<td>36 (3 x 12)</td>
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<tr>
<td>Placebo, 1e11 (Active Phase Complete)</td>
<td>24 (2 x 12)</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td><strong>60</strong></td>
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**Purpose:**
- Safety and Immunogenicity
- Dose Ranging
Vaxart Ebola Vaccine Program, Timelines

Preclinical Data in 2012
- Collaboration with USAMRIID
- 100% Survival against Challenge in Mice

Funding Request Submitted to fund NHP Studies
- Limited clinical data

August 2014: USAMRIID/Vaxart Re-activated Program
- Room Temperature Stable Tablets
- Vaxart manufactured vaccine for NHP studies and Phase I
- PIND Meetings in 4Q 2014
- Resubmitted funding proposal
Decision Factors, Constraints, Opportunities

Privately Held

- Development Stage
- No Revenues, dependent on capital

Constraints

- Pressure to deliver on Milestones that drive Economic Value to help raise next financing
- Opportunity Cost

Positive Forces

- Strong desire to work on meaningful targets
- Clear Development Path
- Government funding, partnership
TABLET VACCINE OFFERS KEY ADVANTAGES

**SEASONAL FLU**
- Tablets
- Speed
- Safety/Tolerability
- Manufacturing

**EBOLA 1**
- Infection Through Mucosal Surfaces
- Room Temperature Stable Tablet Is Key for Distribution to Africa
- Opportunity for Accelerated Approval

**NOROVIRUS**
- 50% of All Foodborne Intestinal Viral Infections
- Mucosal Immunity Is Critical for Protection

**Preclinical**

**RSV**
- 177,000 Hospitalizations and 14,000 Deaths Among Elderly
- Mucosal Component
- Annual Vaccination
- Synergy with Flu in Timing

**HERPES 2 - THERAPEUTIC**
- 15 – 20% of Adults Are Infected
- T-Cells Are Essential
- Tablet Is Key Competitive Advantage

1) Subject to Government funding