This presentation contains "forward-looking statements" as that term is defined under the Private Securities Litigation Reform Act of 1995 (PSLRA), including statements regarding expectations, beliefs or intentions regarding our business, technologies and products strategies or prospects. Actual results may differ from those projected due to a number of risks and uncertainties, including, but not limited to, the possibility that some or all of the pending matters and transactions being considered by the Company may not proceed as contemplated, and by all other matters specified in Company's filings with the Securities and Exchange Commission, as well as risks inherent in funding, developing and obtaining regulatory approvals of new, commercially-viable and competitive products and product candidates. Sufficiency of the data for approval with respect to Cynviloq™ will be a review issue after NDA filing. These statements are made based upon current expectations that are subject to risk and uncertainty and information available to the Company as of the date of this presentation. The Company does not undertake to update forward-looking statements in this presentation to reflect actual results, changes in assumptions or changes in other factors affecting such forward-looking information. Assumptions and other information that could cause results to differ from those set forth in the forward-looking information can be found in the Company's filings with the Securities and Exchange Commission, including its most recent periodic report. We intend that all forward-looking statements be subject to the safe-harbor provisions of the PSLRA.
## Management Team

<table>
<thead>
<tr>
<th>Name</th>
<th>Title and Experience</th>
</tr>
</thead>
</table>
| Henry Ji, Ph.D.       | Inventor of G-MAB® Technology  
President & CEO of Stratagene Genomics  
VP of CombiMatrix and Stratagene                                             |
| Amar Singh            | Closed major business transactions on oncology products  
Led Novacea global transaction (Asentar®) with Schering-Plough valued at >$500M  
Led major deals at Spectrum Pharmaceuticals  
Responsible for building Abraxis commercial organization  
Led oncology franchise at Hoffmann-La Roche |
| George Uy             | Directed the launches of Abraxane, Xeloda® & Fusilev®  
Built commercial infrastructures and organizations in startup companies |
| David Miao, Ph.D.     | President and CSO of Concortis BioSystems  
Co-inventor of IP covering ADC technologies  
Head of Chemistry at Ambrx                                                     |
| Mike Royal            | Key contributor to over a dozen ANDAs and several NDAs  
Managed clinical operations and regulatory activities across multiple trials worldwide for both small molecule and biologic products |
| Richard Vincent       | $430M sale of Elevation to Sunovion-Dainippon  
Meritage Pharma option agreement with ViroPharma ($90M upfront + milestones)  
$310M sale of Verus asthma program to AstraZeneca  
Elan: various acquisitions and divestitures with aggregate values more than $300M |

## Board of Directors

<table>
<thead>
<tr>
<th>Name</th>
<th>Title and Experience</th>
</tr>
</thead>
</table>
| William S. Marth           | Chairman  
Albany Molecular (President & CEO)  
Teva – Americas (former President & CEO) |
| Mark Durand                | Watson, Teva – Americas  
(former CFO) |
| Cam Gallagher              | Nerveda, LLC  
(Managing Director) |
| Kim D. Janda, Ph.D.        | The Scripps Research Institute  
(Professor) |
| Henry Ji, Ph.D.            | Sorrento  
(CEO) |
| Jaisim Shah                | PDL  
(former CBO) |
| Vuong Trieu, Ph.D.         | Abraxis  
(co-inventor of Abraxane®); IgDraSol  
(CEO) |
ADC: Antibody Drug Conjugate
G-MAB targets toxin to cancer cell
Proprietary toxins and linkers
C-Lock and K-Lock conjugation chemistries

Cynviloq
First-Patient-In Bioequivalence Trial
Bioequivalence regulatory pathway
Efficacy demonstrated
North America, EU and Australia rights

G-MAB
High-diversity human Ab library
Lead mAb programs include
PD-L1, PD-1, and CCR2
Bi-specific antibodies in development
**INDICATION**

<table>
<thead>
<tr>
<th>CYNVILOQ™</th>
<th>PRECLINICAL</th>
<th>PHASE 1</th>
<th>PHASE 2</th>
<th>PHASE 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metastatic Breast Cancer</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Non-Small Cell Lung Cancer</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Pancreatic Cancer (BE* or sNDA)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Bladder Cancer (sNDA)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Ovarian Cancer (sNDA)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

| RTX | PRECLINICAL | PHASE 1 | PHASE 2 | PHASE 3 |
| Intractable Cancer Pain | ✓ | ✓ | ✓ | ✓ |

**INDICATION > TARGET**

| G-MAB | PRECLINICAL | PHASE 1 | PHASE 2 | PHASE 3 |
| Oncology > PD-L1 | ✓ | ✓ | ✓ | ✓ |
| Oncology > PD-1 | ✓ | ✓ | ✓ | ✓ |
| Oncology/Inflammation > CCR2, CXCR3 | ✓ | ✓ | ✓ | ✓ |

| ADC | PRECLINICAL | PHASE 1 | PHASE 2 | PHASE 3 |
| Oncology > VEGFR2, c-Met, CXCR5 | ✓ | ✓ | ✓ | ✓ |

| BI-SPECIFIC AB | PRECLINICAL | PHASE 1 | PHASE 2 | PHASE 3 |
| Oncology | ✓ | ✓ | ✓ | ✓ |

* Abraxane® (albumin-bound paclitaxel) orphan drug status (FDA approval, September 2013)
Lead Oncology Product Opportunity

Cynviloq → Registration Trial
Cynviloq: Next Generation Paclitaxel Therapy

1st Generation

**Taxol®**
paclitaxel

**Formulation**
Cremophor EL excipient: Polyoxyethylated castor oil

**Maximum Tolerated Dose**
175 mg/m²

**Peak Product Sales**
~ $1.6B (WW in 2000)

2nd Generation

**Albumin bound-paclitaxel***

**Mean size 130 nm**

**Formulation**
Biological polymer: Donor-derived human serum albumin (HSA)

**Maximum Tolerated Dose**
260 mg/m²

**Peak Product Sales**
Est. >$1.7B** (US)
($430M in 2012)

3rd Generation

**Cynviloq**
paclitaxel polymeric micelle

**Mean size ~25 nm**

**Formulation**
Chemical polymer: Poly-lactide and polyethylene glycol diblock copolymer

**Maximum Tolerated Dose**
>300 mg/m² (up to 435 mg/m²)

**Peak Product Sales**
Conversion of albumin-paclitaxel sales + new indications

*Abraxane®/ Celgene Corporation.
**Analyst projection; in MBC + NSCLC + PC
Clinical Efficacy & Safety Summary

Total number of patients across all trials: 1,260

<table>
<thead>
<tr>
<th>Phase 1:</th>
<th>Trials established higher MTD in US - Dana Farber Cancer Inst, Russia, &amp; S. Korea (total n=80) &gt;300 mg/m² (q3w) vs. 175 mg/m² (Taxol; weekly) and 275 mg/m² (Abraxane; q3w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 2:</td>
<td>Completed trials in MBC, NSCLC, PC, OC, BC; in US - Yale Cancer Center, Russia, S. Korea (total n=259) Data suggestive of efficacy comparable to historic data for albumin-paclitaxel and superior to historic Taxol data or Standard-of-Care Possible Phase 3 sNDA programs in these tumor types</td>
</tr>
<tr>
<td>Phase 3:</td>
<td>Ongoing trial for MBC in S. Korea (total n=209; Cynviloq n=105) GPMBC301. An Open-label, Randomized, Parallel, Phase 3 Trial to Evaluate the Efficacy and Safety of Cynviloq compared to Genexol® (Paclitaxel with Cremophor EL) in Subjects with Recurrent or Metastatic Breast Cancer Interim analysis suggests ORR superior to Taxol and comparable to historic Abraxane efficacy Efficacy and safety data supportive of 505(b)(2) BE submission</td>
</tr>
<tr>
<td>PM-Safety:</td>
<td>Completed for MBC and NSCLC (total n=502) Efficacy and safety data supportive of 505(b)(2) BE submission</td>
</tr>
<tr>
<td>Phase 2b (IIS):</td>
<td>Chemo-naïve Stage IIIb/IV NSCLC vs Taxol in S. Korea (total n=276; Cynviloq n=140) 230 mg/m² + cis (q3w) vs. Taxol 175 mg/m² + cis; non-inferiority established</td>
</tr>
<tr>
<td>Phase 2 (IIS):</td>
<td>1st line treatment of OC vs Taxol in S. Korea (total n=100; Cynviloq n=50) 260 mg/m² + carbo (q3w) vs. Taxol 175 mg/m² + carbo; non-inferiority established</td>
</tr>
</tbody>
</table>
### Equivalent PK in Mice

<table>
<thead>
<tr>
<th>Drug</th>
<th>HL (h)</th>
<th>T max (h)</th>
<th>AUCinf (h*ng/mL)</th>
<th>Vz (mL/kg)</th>
<th>Cl (mL/h/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albumin bound-paclitaxel</td>
<td>2.99</td>
<td>0.08</td>
<td>61561.33</td>
<td>2103.71</td>
<td>487.32</td>
</tr>
<tr>
<td>Cynviloq</td>
<td>2.83</td>
<td>0.08</td>
<td>58151.31</td>
<td>2103.58</td>
<td>515.90</td>
</tr>
</tbody>
</table>

Data on file  
IV bolus at 30 mg/kg; n = 3
## Comparable PK in Humans

Data from 2 separate studies  
(3 h infusion, 135 mg/m² dose, n=3)

<table>
<thead>
<tr>
<th></th>
<th>Cmax (ng/ml)</th>
<th>AUCinf (ng/ml*h)</th>
<th>Half-Life (hr)</th>
<th>Cl (L / hr / m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albumin bound-paclitaxel</td>
<td>1392</td>
<td>5654</td>
<td>12.9</td>
<td>27.4</td>
</tr>
<tr>
<td>Cynviloq™</td>
<td>1357</td>
<td>5473</td>
<td>12.7</td>
<td>25.5</td>
</tr>
</tbody>
</table>

Bioequivalence = Efficient Pathway to Market

TRIBECA™ (TRIal designed to evaluate BioEquivalence between Cynviloq™ and nab-paclitaxel) (2014)
- Patients with MBC
- Trial Duration = 12 months (including patient recruitment)

<table>
<thead>
<tr>
<th>Cycle 1</th>
<th>Albumin-paclitaxel (n = 50)</th>
<th>Cynviloq (n = 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cycle 2</td>
<td>Albumin-paclitaxel</td>
<td>Cynviloq</td>
</tr>
</tbody>
</table>

Key Parameters:
- Dose: 260 mg/m²
- Infusion time: 30 min
- Duration: 3 weeks + crossover for 3 weeks
- Endpoints: AUC and Cmax (90% CI)

First patient dosed March 31, 2014
## Potential Cynviloq Advantages

<table>
<thead>
<tr>
<th></th>
<th>Cynviloq</th>
<th>Albumin bound-Paclitaxel</th>
<th>Taxol</th>
<th>Cynviloq Advantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Tolerated Dose (mg/m²)</td>
<td>&gt;300</td>
<td>260</td>
<td>175</td>
<td>Potential for higher efficacy</td>
</tr>
<tr>
<td>Rapid reconstitution: no foaming concerns</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>Convenience for busy practices and pharmacies</td>
</tr>
<tr>
<td>Convenient storage conditions</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>No requirement for controlled temp storage</td>
</tr>
<tr>
<td>No microbial growth</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>Chemical polymer</td>
</tr>
<tr>
<td>HSA-free</td>
<td>●</td>
<td></td>
<td></td>
<td>Albumin-bound pac PI cites ‘theoretical risks from viral transmission’ derived from HSA</td>
</tr>
<tr>
<td>Cremophor-free</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>Reduced side effects</td>
</tr>
<tr>
<td>Dosing</td>
<td>q3w</td>
<td>q3w* &amp; weekly**</td>
<td>q3w &amp; weekly</td>
<td>Exploits PK advantage @ higher dose</td>
</tr>
</tbody>
</table>

* = MBC; ** = NSCLC & PC
Next Steps for Cynviloq

First patient dosed: **March 31, 2014**

NDA filing: **2015**

Product launch (MBC and NSCLC): **2016**

sNDA planning for label expansion into pancreatic, bladder, and ovarian cancers
Resiniferatoxin (RTX): A Novel, Non-opiate Analgesic
Two Injection Sites = Two Products for Human Use

**Intraganglionic**
(injection into or near the ganglion)

**Intrathecal**
(injection into the cerebrospinal fluid space)
RTX Ablates TRPV1-positive Neurons after Intrathecal Injection

Adapted from Karai et al. 2004
Open-Label Study in Companion Dogs

Intractable pain due to osteosarcoma

100% response rate with single intrathecal injection

12 dogs reduced or discontinued analgesics

Dogs passed away due to underlying osteosarcoma, not RTX treatment

Permanent analgesic effect

- Personality intact
- Gait and mood visibly improved

Lack of serious adverse events

- No opioid-like side effects

Animal health market represents separate licensing opportunity

VASS (0 to 100 mm)
Observational Pain Score

Weeks

(p < 0.0001 for all time points)

n=18
n=8
n=5
n=4
Unilateral Effect Following Trigeminal Injection

Adapted from Tender et al. 2005

Nociceptive neuron-mediated neurogenic inflammation (Evans blue)

Left eye (blue) vs Right eye (red)
Interim Data from the Phase 1/2 NIH sponsored trial

- 6 advanced cancer pts with severe refractory pain dosed with no unexpected toxicity
- MTD not reached, additional dose escalation being explored
- Clinically meaningful improvement in QOL
- Improved pain scores with increased activity

Data presented May 1, 2014 at 33rd Annual Scientific Meeting of the American Pain Society; Tampa, FL

### Demographics at Study Entry

<table>
<thead>
<tr>
<th>Cancer Diagnosis</th>
<th>Target Pain Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>49 y (f) Metastatic breast cancer</td>
<td>Low back and bilateral leg pain 2º bone mets</td>
</tr>
<tr>
<td>56 y (m) Metastatic supraglottic squamous cell cancer</td>
<td>Low back and bilateral hip pain 2º bone mets</td>
</tr>
<tr>
<td>57 y (m) Metastatic pancreatic cancer</td>
<td>Bilateral abdominal (visceral) pain</td>
</tr>
<tr>
<td>68 y (m) Lymphoma, small fiber monoclonal gammopathy</td>
<td>Bilateral hip and buttocks (neuropathic) pain</td>
</tr>
<tr>
<td>55 y (m) Metastatic small cell lung cancer</td>
<td>Left hip pain 2º bone mets</td>
</tr>
<tr>
<td>61 y (f) Metastatic endometrial cancer</td>
<td>Low back and left hip/groin pain 2º bone mets</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Patient</th>
<th>Pre RTX</th>
<th>Injection Date</th>
<th>Last NRS PI score</th>
<th>%NRS PI Improvement</th>
<th>Details</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7.3</td>
<td>5/9/11</td>
<td>6.1 (6 mo)</td>
<td>15.5</td>
<td>Bedridden to walking; nearly Y3 post RTX; cancer has progressed</td>
<td>Died D35 of pneumonia 2º cancer</td>
</tr>
<tr>
<td>2</td>
<td>8.3</td>
<td>5/10/12</td>
<td>3.8 (2 wk)</td>
<td>54.0</td>
<td></td>
<td>Died just past D30 of cancer</td>
</tr>
<tr>
<td>3</td>
<td>8.4</td>
<td>8/3/12</td>
<td>6.0 (1 mo)</td>
<td>28.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>8.0</td>
<td>10/23/12</td>
<td>5.4 (6 mo)</td>
<td>32.1</td>
<td>Wheelchair-bound to walking; Y1.5 post RTX; cancer has progressed</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>9.0</td>
<td>2/13/13</td>
<td>8.1 (1 mo)</td>
<td>9.6</td>
<td>Died W6 of cancer</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>8.6</td>
<td>9/23/13</td>
<td>7.9 (1 mo)</td>
<td>8.3</td>
<td>Breakthrough pain meds reduced by half by M1; ET from study just after M1 due to cancer progression; died just after M3</td>
<td></td>
</tr>
</tbody>
</table>

Baseline average NRS = 8.27
Average NRS reduction = 2.05 (24.7% Improvement)
Average 1.6 point improvement across BPI pain interference items.
Next Steps for RTX Development

Under NIH CRADA

Intractable cancer pain clinical Phase 1/2 trial (intrathecal injection); n~13 patients
Phase 1/2 trial for osteosarcoma (intraganglionic injection); n~15 patients

Under Sorrento IND

Intractable cancer pain clinical Phase 1/2 trial (intrathecal injection); n~40 patients
Filing for MUMS designation for osteosarcoma in dogs

~3 years for clinical development
Immunotherapy Programs

G-MAB & ADC

Mono- and Bi-specific Antibodies + Proprietary Toxins
G-MAB: Library of Therapeutic Antibodies

Proprietary technology:
- RNA amplification used for library generation
- Freedom-To-Operate
- No stacking royalties

Very high library diversity:
- $2.1 \times 10^{16}$ distinct antibodies
- Fully human antibodies
- High successful screening hit rate

Difficult Targets:
- Small Peptides

High Value Oncology Targets:
- Immune modulation: PD1 and PD-L1
- Antibody Drug Conjugates: VEGFR2 and c-Met

Most Difficult Targets:
- G Protein-Coupled Receptors (GPCRs)

Size of Target Antigen
Anti-PD-L1 mAbs Exhibit Potent Activity

Immune Modulation*

- T Cell Activation (%)
- IFN-γ (pg/mL)
- IL-2 (pg/mL)

Tumor Mouse Model**

- Tumor Growth Inhibition (%)
- Day

* mAbs @ 0.05 mg/mL
** xenograft model using H1975 human NSCLC cells; % inhibition relative to control mAb treatment
*** p<0.05, mean tumor volumes are significantly reduced in STI-A1010 group versus control groups as determined by Mann-Whitney u-test
Potent Antibody against Difficult GPCR Target*

<table>
<thead>
<tr>
<th>mAb</th>
<th>Cell Binding (EC_{50} – nM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sorrento</td>
<td>0.17</td>
</tr>
<tr>
<td>Competitor</td>
<td>21</td>
</tr>
</tbody>
</table>

* Sorrento mAb against C-C Chemokine Receptor 2 (CCR2)

** Experimental Auto-immune Encephalomyelitis (EAE) = murine model of Multiple Sclerosis
Antibody Drug Conjugates (ADCs)

Key Components:

1. Target-specific internalizing antibody
2. Potent cytotoxic prodrugs
3. Linker and conjugation chemistries

Drug released in CANCER CELL
Proprietary High Potency Duostatin Toxins

SKBR3
(Breast Cancer Cell Line)

Duostatins vs. DM1

Duostatins vs. MMAE

% Viability vs. concentration (nM)

Duostatin toxin 1 (K-lock) >15x higher potency
Duostatin toxin 2 (K-lock)
DM1 (conventional; NHS)

% Viability vs. concentration (nM)

Duostatin toxin 1 (K-lock)
Duostatin toxin 2 (K-lock)
MMAE (conventional; maleimide)
K-Lock Conjugation Enables Homogeneous ADCs

Current industry standard chemistry

Proprietary K-Lock chemistry

Sorrento’s homogenous ADC
No need for:
- non-natural amino acids
- genetic re-engineering
- enzymatic posttranslational modification

purified
C-Lock Conjugation Stabilizes ADCs

Current industry standard

Sorrento’s proprietary C-Lock chemistry

Maleimide conjugation
Destabilizes antibody structure
Reduced target specificity
Altered PK profile
Drug-antibody linkage not stable
Off-target drug effects

C-lock conjugation
Enhances ADC stability
Prolongs PK profile
Reduced off-target effects
Proprietary ADC Screening and Optimization Panels

Fast track to IND
Identification of optimal combination of linker, conjugation chemistry and drug payload essential for efficient and expedited development from target to candidates
**Investment Highlights**

**Late-Stage Cancer Drug**
- Product launch expected in 1H 2016
- Addresses multi-billion dollar paclitaxel market
- Abbreviated regulatory pathway ("bioequivalence") for approval

**Intractable Cancer Pain Treatment**
- Ongoing Phase 1/2 study
- Orphan drug status received
- Three potential drug products from same API

**Targeted Cancer Immunotherapeutics**
- First therapeutic antibody candidate in clinic 1H 2016
- Proprietary linker/conjugation chemistry for *homogenous* ADC generation
- First ADC in clinic 1H 2016
- Bi-specific antibodies in development
Developing Therapeutic Solutions to Help
Man’s Life Companions

Animal Health
A Subsidiary of Sorrento
Novel Products Potentially Target Unmet Needs

Ark-001 (Pain assoc/ w Canine Osteosarcoma)
Ark-001 (Pain assoc/ w Canine Osteoarthritis)
Ark-002 (Neuropathic Pain-Navicular Syndrome/Laminitis)
Ark-003 (Idiopathic Cystitis in cats)
Ark-004 (Inflammation and Pain Ocular Abrasion)
Ark-005 (Staph Infections in dogs Dermatitis)
Ark-006 (Mastitis in cows)
Ark-007 (Post Surgical Pain In dogs)

Ark 001, 002, 003 & 004 are RTX-based formulations.
Ark 005 & 006 are AIP vaccines (staph).
## Disease-Specific Market Factors
### Small Animals

<table>
<thead>
<tr>
<th>Disease/Drug</th>
<th>Unmet Need</th>
<th>Competition</th>
<th>Prevalence</th>
<th>Level of Differentiation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ark-001 (Dogs)</strong> Osteosarcoma/Pain</td>
<td>High</td>
<td>Opiates rare use</td>
<td>*83 M Pet dogs 1 in 3 have tumors 5% of all tumors= Osteosarcoma Approximately 1.35 M</td>
<td>Transformative</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Amputation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Alternative interventions unsatisfactory</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ark-001 (Dogs)</strong> Osteoarthritis/Pain</td>
<td>Moderate to High</td>
<td>NSAIDs</td>
<td>4 M dogs in active NSAID treatment</td>
<td>Transformative</td>
</tr>
<tr>
<td></td>
<td></td>
<td>May result in hepatic and GI toxicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ark-005 (Dogs)</strong> Recurring dermatitis/infections</td>
<td>Moderate to High</td>
<td>Antibiotics</td>
<td>**MRSA 1.5-2 % of dogs in community and Vet hospitals</td>
<td>Moderate to significant</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Corticosteroids</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ark-003 (Cats)</strong> Interstitial Cystitis</td>
<td>High</td>
<td>Castration/Spaying</td>
<td>Unknown</td>
<td>TBD</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Anti-anxiety drugs</td>
<td></td>
<td>May reduce bladder hyperactivity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pheromones</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*APPA 2012 and Canine Cancer.com
**Veterinary Medicine, Dec 1, 2012
# Disease-Specific Market Factors

## Large Animals

<table>
<thead>
<tr>
<th>Disease/Drug</th>
<th>Unmet Need</th>
<th>Competition</th>
<th>Prevalence</th>
<th>Level of Differentiation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ark-006 (Cows) Mastitis</td>
<td>High</td>
<td>Antibiotics</td>
<td>Approximately 9.2M cows and 1/3 infected with mastitis annually</td>
<td>TBD: Vaccine delivery may offer high differentiation potential</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mastitis prevention programs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ark-004 (Horses) Ocular Pain/Ocular abrasions</td>
<td>High</td>
<td>Eye drops</td>
<td>High No reliable estimates</td>
<td>Moderate to High: Desensitization of nerves may facilitate abrasion healing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Antibacterial ophthalmic ointments</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lidocaine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ark-002 (Horses) Laminitis</td>
<td>Moderate to High</td>
<td>Pain Killers including NSAIDs</td>
<td><em>9.2 M horses in US</em>* 15% will suffer from laminitis in lifetime</td>
<td>Potentially high based on limited results to date</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Peripheral vasodilators</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Making sense of laminitis; Michelle Andersen, Feb 1 2013
** US Horse Industry Statistics- The equestrian channel 2013
## Market Valuation of Competitor Companies

<table>
<thead>
<tr>
<th>Company</th>
<th>Products on Market</th>
<th>Products in development</th>
<th>Disease Area Focus</th>
<th>Time to market</th>
<th>Market Valuation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARATANA (PETX)</td>
<td>None</td>
<td>&gt;15</td>
<td>Pain, Appetite Stimulants etc</td>
<td>Near Term</td>
<td>$529 M</td>
</tr>
<tr>
<td>KINDRED (KIN)</td>
<td>None</td>
<td>10</td>
<td>Pain, Cancer, GI, Allergy Inflammation, Autoimmune</td>
<td>Near Term</td>
<td>$295 M</td>
</tr>
<tr>
<td>ARK ANIMAL HEALTH</td>
<td>None</td>
<td>&gt;10</td>
<td>Pain, Osteoarthritis, Infections, Interstitial Cystitis, Mastitis, Ocular Pain, Laminitis</td>
<td>Near Term</td>
<td>IPO TBD</td>
</tr>
</tbody>
</table>
Next-Generation Cancer Therapeutics

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