NASDAQ: CLSN

Rodman & Renshaw 17th Annual Global Investment Conference

St. Regis Hotel, New York

September 9, 2015

Safe Harbor Statement

Except for historical information, the statements made in this presentation are forward-looking statements involving significant risks and uncertainties.

These risks and uncertainties, including those related to the future financial position and business strategy of the Company, are detailed in the Company's filings with the Securities and Exchange Commission.

A Fully Integrated Oncology Company

Deep Pipeline and Multiple Technology Platforms

Chemotherapy, Immunotherapy and RNA Therapy Platforms

Multiple near term opportunities for value creation

- Phase 3 in Primary Liver Cancer (HCC)
- Phase 2 in RCW Breast Cancer
- Phase 1 in Ovarian Cancer
- Pre-Clinical/Phase 1 in GBM Brain Cancer
- Pre-Clinical Research for RNA Lung Specific Delivery

Discovery assets complement proven development capabilities

- Nanoparticle Technology
- 1st Line Therapies
- Oncology Focused

Strong cash position following EGEN acquisition

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Three Platforms to Drive Growth

LTSL

Lysolipid Thermally Sensitive Liposomes

ThermoDox:
Liposomal Doxorubicin

Phase 3 Study in HCC
Phase 2 Study in RCW

TheraPlas

DNA-based Non-viral Immunotherapy

GEN-1:
IL-12 Immunotherapy

Phase 1 in Ovarian Cancer
Pre-Clinical/Phase 1 in GBM

TheraSilence

RNA-based Non-viral Carriers, Lung Specific

Delivery of siRNA, mRNA,

Pre-Clinical Delivery Cancer
Pre-Clinical Delivery PAH, ++

Pipeline of Targeted Therapeutic Agents

INDICATION	PRODUCT CANDIDATE	PRE-CLINICAL	PHASE 1-2	PHASE 3
Primary Liver	ThermoDox - OPTIMA Study			Phase III enrolling
RCW Breast	ThermoDox - Euro-DIGNITY		Phase II initiating	
Ovarian	GEN-1 - 1st line OVATION		Phase I enrolling	
Glioblastoma	GEN-1 - Pre-Clinical	Efficacy/Safety/Toxicology		

Near-Term Clinical Milestones:

- GEN-1 Translational Data from Phase 1 Ovarian Cancer Trial
- GEN-1 First Patient Phase 1b OVATION Neo-Adjuvant Ovarian Cancer Trial
- GEN-1 Preclinical Data and IND for GBM Brain Cancer
- OPTIMA trial agreement CFDA
- First Patient in EU-Dignity
- Phase II DIGNITY Study at San Antonio Breast Cancer Conference

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Hepatocellular Carcinoma

Large and Deadly Global Cancer

- **5th most prevalent**
  - 800,000 annual incidence worldwide; growing 5% per year
  - By 2020, expected to be the #1 cancer, surpassing lung cancer
  - China has 50% of new cases; 75% in Asia
- **4th highest mortality**
  - 5-year survival rate less than 10%
  - Median survival from time of diagnosis is less than 40 months
  - Cure, usually through surgery, is possible in less than 20% of patients
- **Local therapies include:**
  - RFA, TACE and radiation
  - RFA is the dominant treatment average local recurrence rate of 50% for lesions > 3 cm
  - ThermoDox + RFA addresses limitations of current standard of care by **"Expanding the Treatment Zone"**

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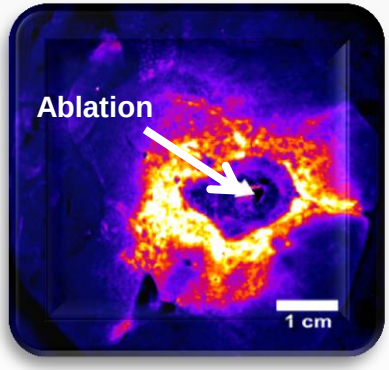
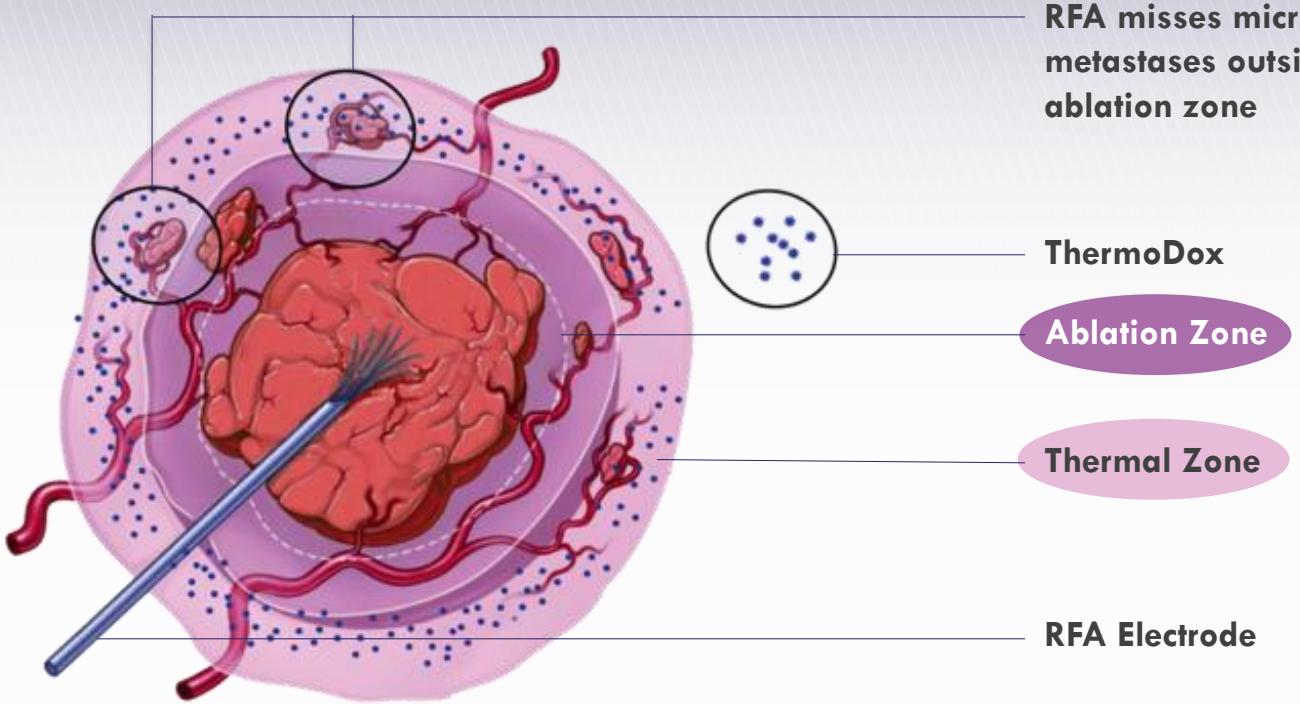
RF Liver Ablation + ThermoDox®

Expanding the Treatment Zone Addresses RFA Limitations

ThermoDox
+
sRFA 45





- ThermoDox infused IV ~15 minutes prior to sRFA
- ThermoDox concentrates in the "Thermal Zone" over a 45 minute period
- Doxorubicin is released in the "Thermal Zone" expanding treatment area

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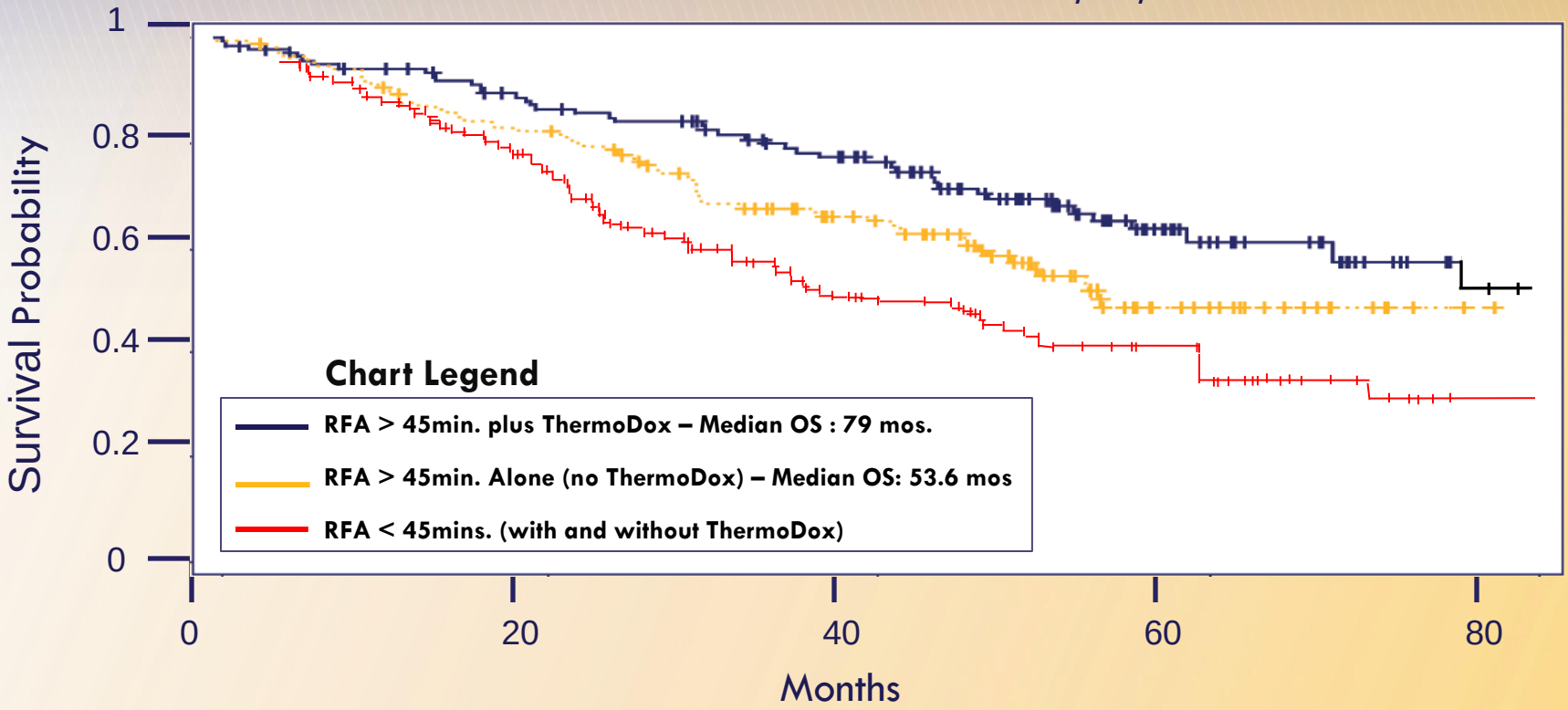
Sub-Group Analysis (Single Lesion) of HEAT Study

285 Patients Standardized RFA >45 minutes +/- ThermoDox vs
167 Patients RFA < 45 minutes



OS sRFA > 45mins. +/- ThermoDox	HR=0.63 (95% CI 0.43 - 0.93) *P* Value=0.0198

sRFA45 Standardized RFA > 45 mins.

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Phase 3 OPTIMA Study Design

ThermoDox Plus RFA 45

General Eligibility
- Non-resectable HCC
- Single lesions
- Lesion > 3 cm but not > 7 cm
- Treatment naïve
- Child-Pugh A

Stratification
- Lesion size: 3-5 cm / 5-7 cm
- Geography

Randomize 1:1

- N=275 → **ThermoDox plus sRFA***
- N=275 → **Dummy Infusion + sRFA***

Primary Endpoint	Overall Survival (OS)
Secondary Endpoints	Progression Free Survival; Safety
Interim Efficacy Analysis	118 OS Events / HR < 0.61 158 OS Events / HR < 0.70
Final Efficacy	197 OS Events / HR < 0.75

First Patient Enrolled Q3 – 2014

~75 Clinical Sites in 13 Countries

*Standardized Radiofrequency Ablation > 45 minutes

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Phase 2 RCW Breast Cancer Study

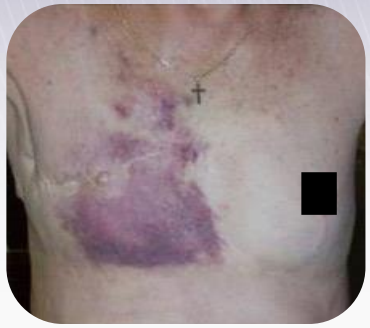
ThermoDox + Hyperthermia

Phase 2 DIGNITY Study

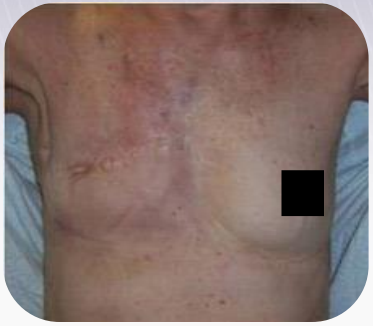
Primary Objectives

- Evaluated local-regional breast tumor response. 17 patients enrolled & treated, 13 evaluable for efficacy
  - All patients experienced stabilization of disease
  - 70% of patients in evaluable population observed local responses - 5 CRs & 4 PRs
- Established pharmacokinetic bioequivalence between ThermoDox manufactured at two different manufacturing sites.

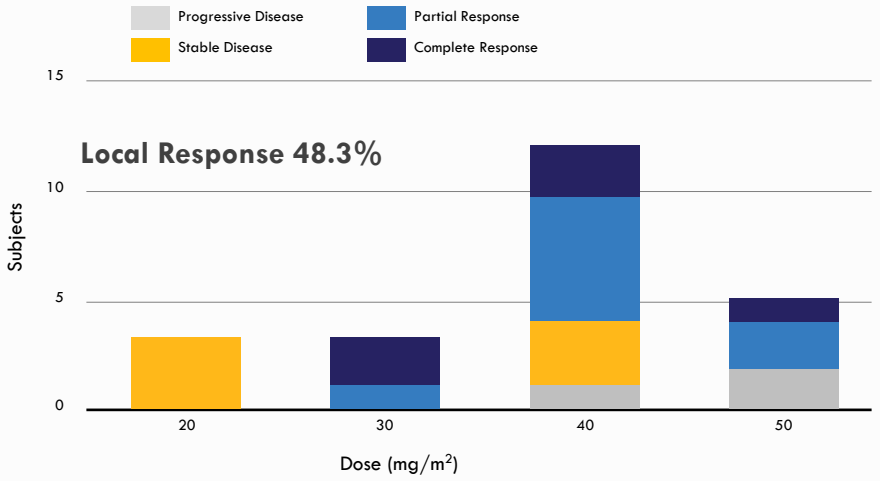
Limited Treatment Options



Complete Response



Combined Phase 1 Data (n = 29)



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Euro-DIGNITY Study

ThermoDox + Hyperthermia + Radiation

Primary Objective

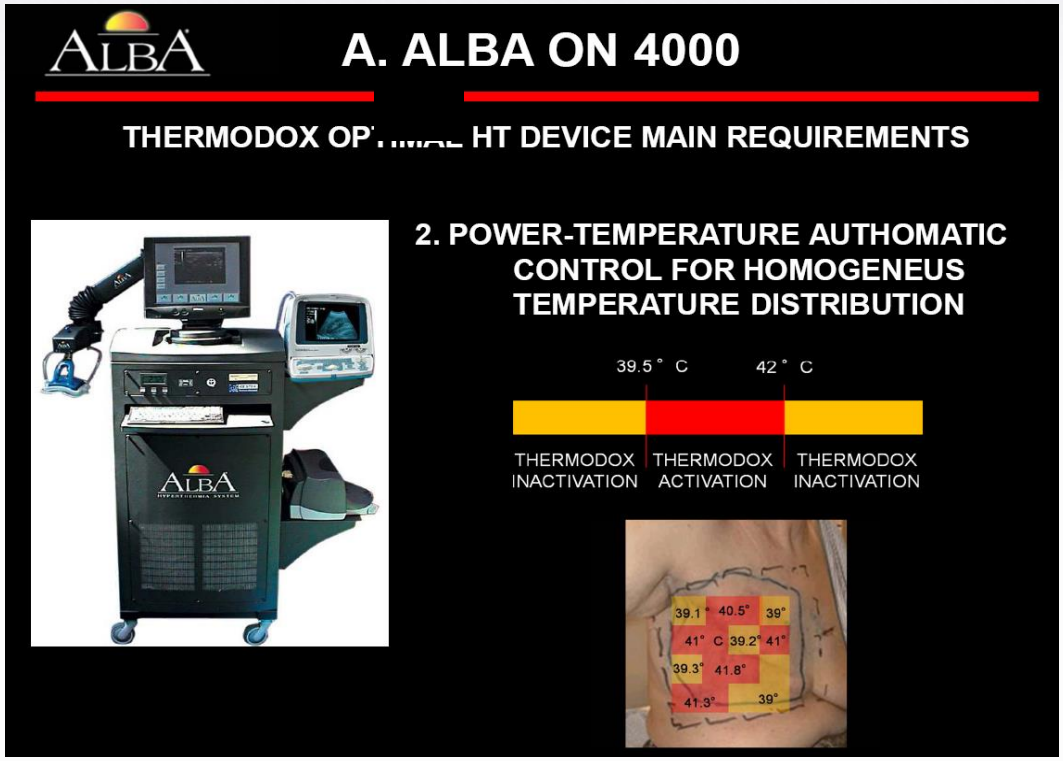
- Evaluate loco-regional breast tumor control in patients undergoing Tri-Modal Therapy

70 patients to be enrolled

Open Label Design

Study Timelines

- Site Activation: Q4 2015
- Recruitment Period: 2016 – 2017
- LP/LV through Follow-Up: 2018



Early Access Program in Europe

ThermoDox for RCW and HCC Patients

EAP offers patients access to innovative non-registered pharmaceuticals

- License/Distribution Agreement signed with myTomorrows in 2015
- EAP in Europe is over $6B per year

EAP Requirements

- Product must be in Phase 2 trials or later; have shown evidence of efficacy
- May be provided to patient with serious disease and no alternative therapy exists
- Awareness and physician training are used to educate the medical community

EAP Pricing/Market

- HCC and RCW breast cancer ~40K incidence
- 23 EU countries + Israel.
- Product pricing determined by the Sponsor

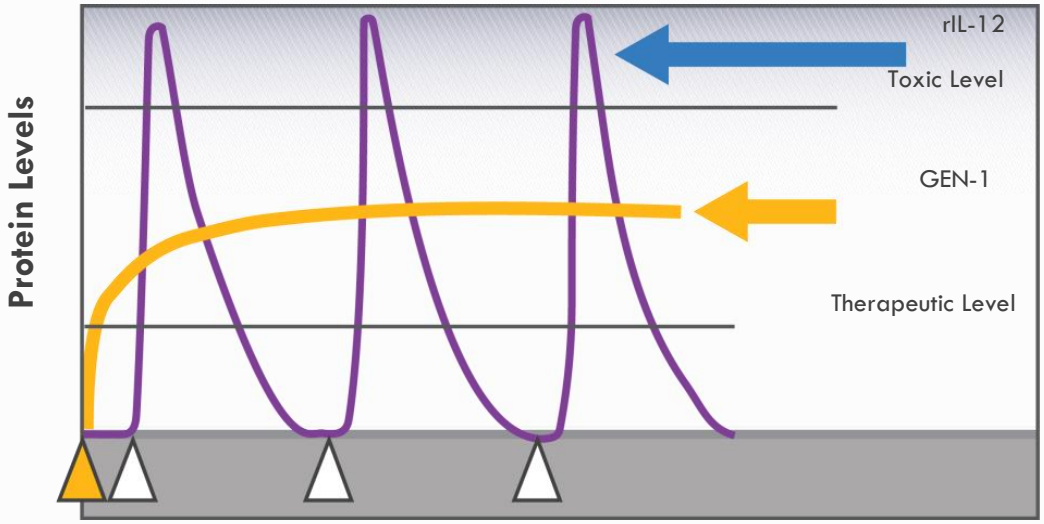
GEN-1

Novel PPC Nanoparticle + Plasmid Coded for IL-12

Rationale for Local Therapy with DNA Nanoparticles

- Local production of potent cytokine IL-12
- IL-12 recruits immune system with multiple mechanisms of action
- NK Cell Activation, T Cell Activation, Anti-angiogensis, and T-Reg Suppression
- Avoids serious toxicities and poor pK of recombinant IL-12

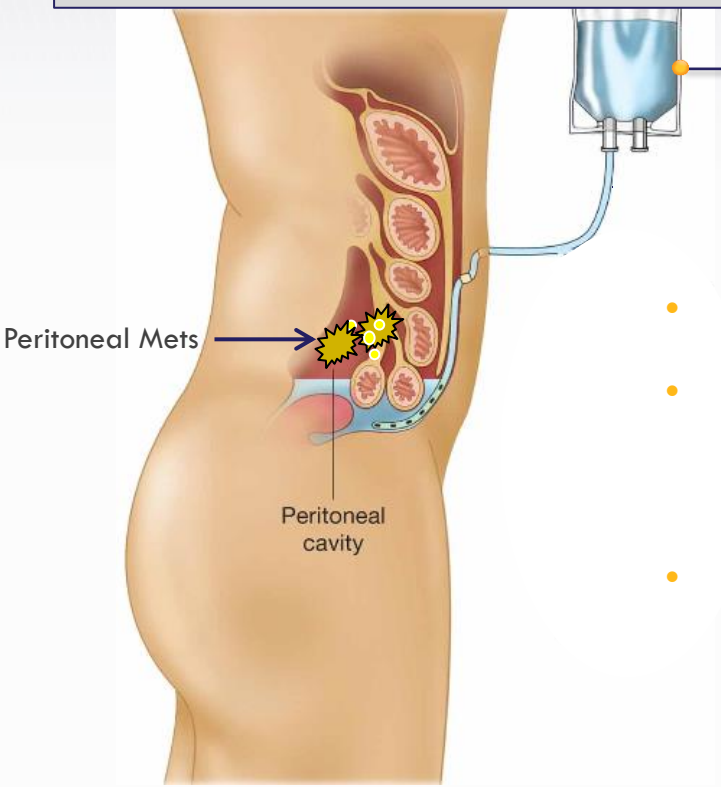
GEN-1 an Alternative to rIL-12 Poor pK

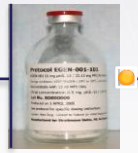


GEN-1 for Ovarian Cancer

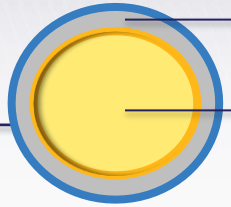
Local Immunotherapy Addresses Limitations of Chemotherapy

Persistent Local Delivery of an Immune Agent with a Single Administration





GEN-1



Stable Nanoparticles for Local Delivery

- GEN-1causes the production of IL-12 at cancer site
- IL-12 addresses cancer cells that are chemo-resistant by recruiting the immune system, inducing powerful anti-cancer mechanisms
- Clinical experience strongly supports development in combination with first line treatment

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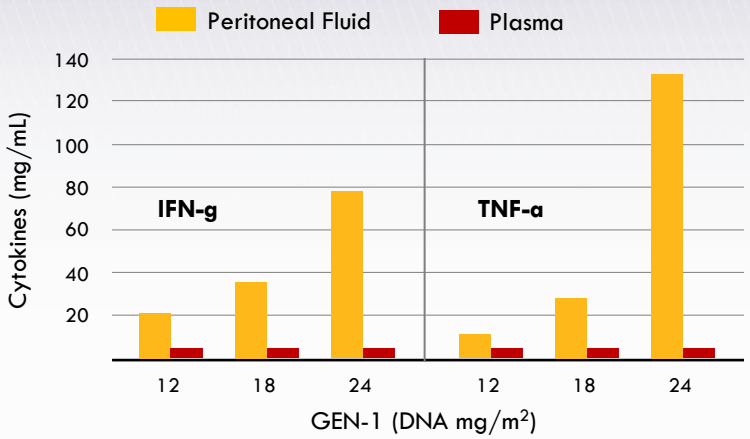
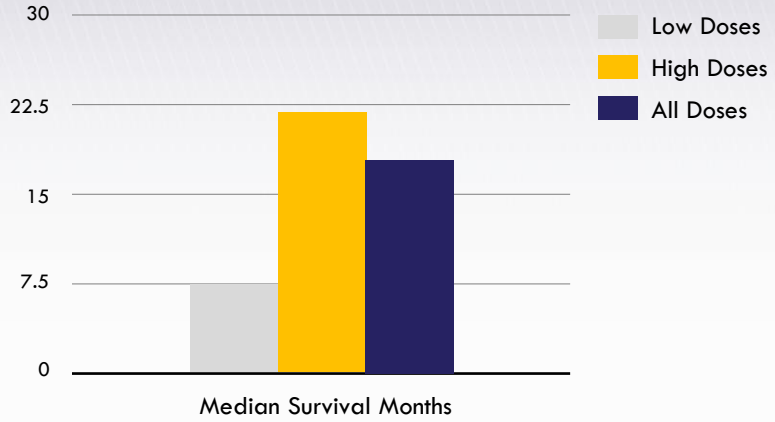
GEN-1

Clinical Experience To-Date

1 Convincing Evidence of Biological Activity



2 Single Agent Benefit



3 Lack of Overlapping Toxicities Allows for Combination Therapies

GEN-1 (IP)

- Gastrointestinal
- Low Grade Fever
- Chills
- Catheter Site Pain/Redness
- Abdominal Discomfort

Chemotherapy (IP)

- Cardiovascular, Hematological
- Metabolic, Neurologic
- Fever, Infection
- Urinary Problems , Gastrointestinal
- Hepatic, Fatigue, Metabolic, Pain

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Phase IB Study

Platinum Resistant Ovarian Cancer conducted by GOG

Safety, Biological Activity & Efficacy of Combination Therapy

Traditional 3+3 Escalation Design (n=16; enrollment completed)

Dose Level	GEN-1 (mg/m^2)	Doxil (mg/m^2)	Status
1	24	40	Completed
2	36	40	Completed
3	36	50	Completed

- All doses well tolerated; no DLTs
- Better clinical responses at 36 mg/m^2 dose
  - Clinical Response Rate (SD+PR+CR) (all doses): > **50%**
  - Clinical Response Rate (SD+PR+CR) at 36 mg/m^2 dose: **86%**
- Compares favorably to current SoC in Platinum Resistant Ovarian Cancer
  - Single Agent Doxil in four (4) previous studies: Overall Clinical Response Rate (SD+PR+CR) of **< 50%**

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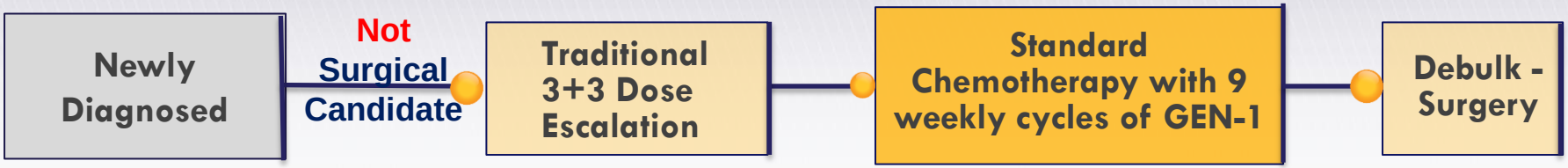
GEN-1 as a First Line Treatment in Ovarian Cancer

Phase I Study



Neoadjuvant Study in Newly Diagnosed Ovarian Cancer Patients	To determine safety, dose, and feasibility in target patient population
Primary Endpoint	Optimal Dose (Max or MTD)
Secondary Endpoints	pCR, PFS, ↑IFNγ, ↑IL-12, ↓VEGF

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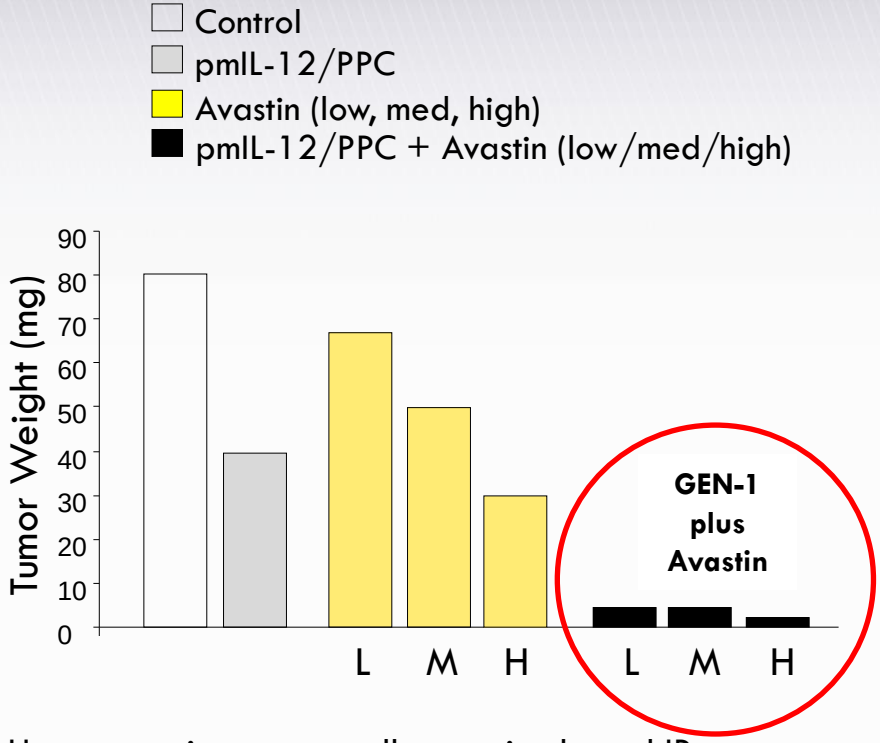
GEN-1 + Avastin in Disseminated Ovarian Cancer

Pre-Clinical Study

Dramatic Improvement in Avastin Activity in Combination with pmIL-12/PPC (GEN-1)



Comparison	#	Mean Tumor Burden	Two-Tailed P-Value
Avastin +GEN-1 vs. Control	18 5	3.45 mg 80.1 mg	0.035
Avastin+GEN-1 vs. Avastin	18 18	3.45 mg 48.9 mg	0.025
Avastin+GEN-1 vs. GEN-1	18 6	3.45 mg 41.6 mg	0.012

Human ovarian cancer cells were implanted IP.

- Avastin treatment at 5 mg/kg, 10 mg/kg \and 20 mg/kg was initiated 9 days after tumor implantation
- pmIL-12/PPC was given weekly for 4 weeks; 14 days after tumor implantation

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Phase I/II in Platinum Resistant Ovarian Cancer

GEN-1in Combination with Avastin + Doxil

- Inhibition of VEGF by IL-12 through the interferon-gamma pathway helps explain remarkable synergy between GEN-1 and Avastin
- Potentially addresses the VEGF escape mechanism described in resistance to Avastin therapy
- Previous clinical studies have shown excellent safety of GEN-1 with Doxil. Now completing pre-clinical safety study with Doxil + Avastin
- Phase 1 design to optimize GEN-1and Avastin dosing to enhance safety profile and establish efficacy for Phase 2
- IND this year; Initiate trial in early 2016

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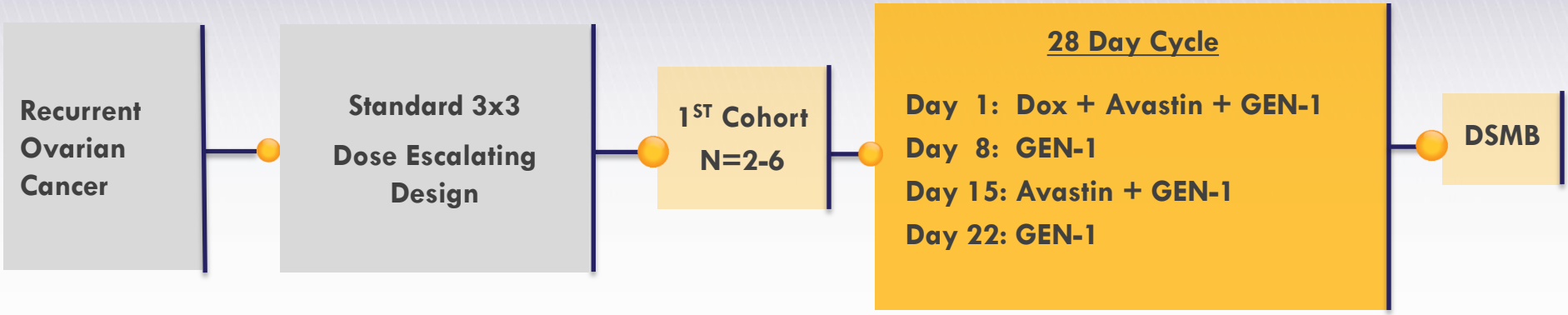
GEN-1 with Avastin® and Doxil

Platinum – Resistant Recurrent Ovarian Cancer



Primary Endpoint	Optimal Safe Dose
Secondary Endpoint	Clinical Objective Tumor Response
Secondary Endpoint (Biological/Immunological)	IL-12, IFN-γ, TNF-α, IL-10, TGF-β, and VEGF concentrations in the blood and peritoneal fluid

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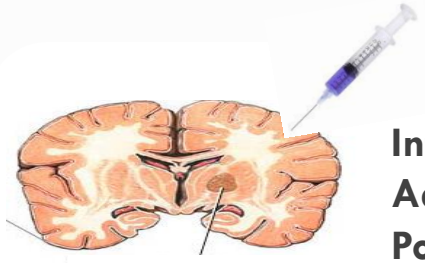
Glioblastoma Multiform

Phase I in 2016

Preclinical Experience

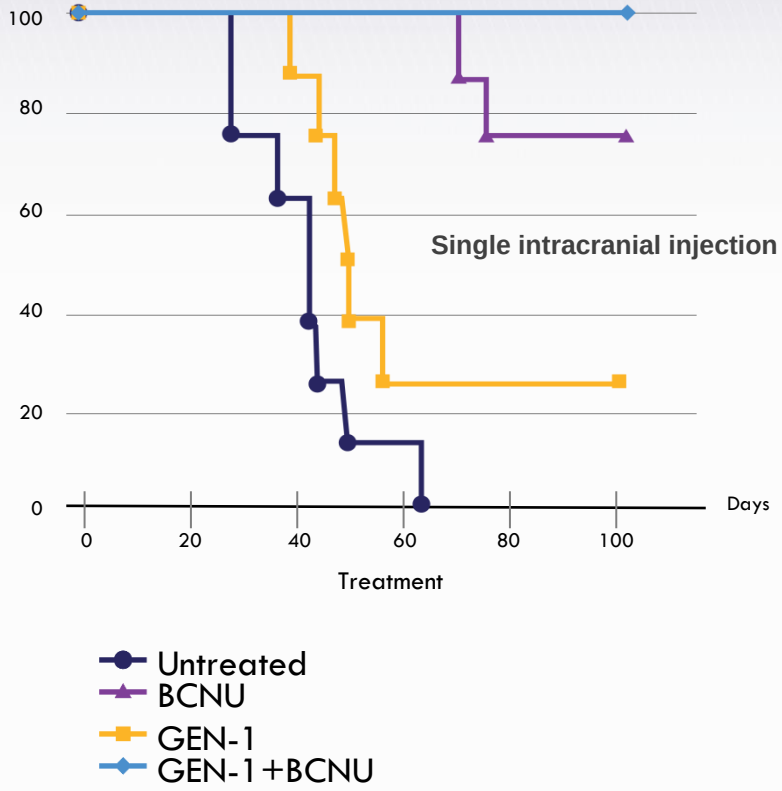
- IL-12 expression for one month in normal brain tissue
- Mechanism for local administration
- Bio-distribution studies
- Safety established



Brain tumor

Intra-Cranial Administration Post-Resection

Survival Benefits in Glioma Model



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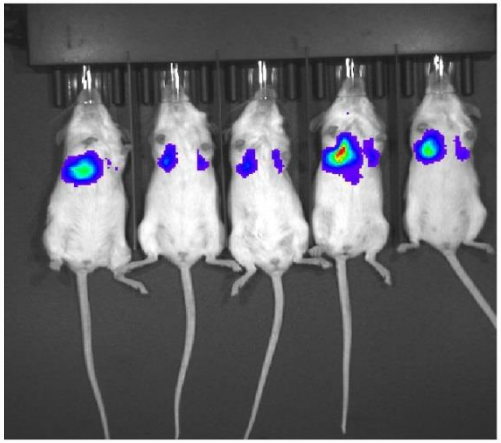
TheraSilence

Systemic RNA Delivery to the Lung

Staramine and Polymeric Systems

- mRNA pre-clinical program in NHP and murine models
- siRNA pre-clinical PAH and other pulminary diseases
- miRNA in Lung Cancer

Intravenous Delivery of Luciferase mRNA



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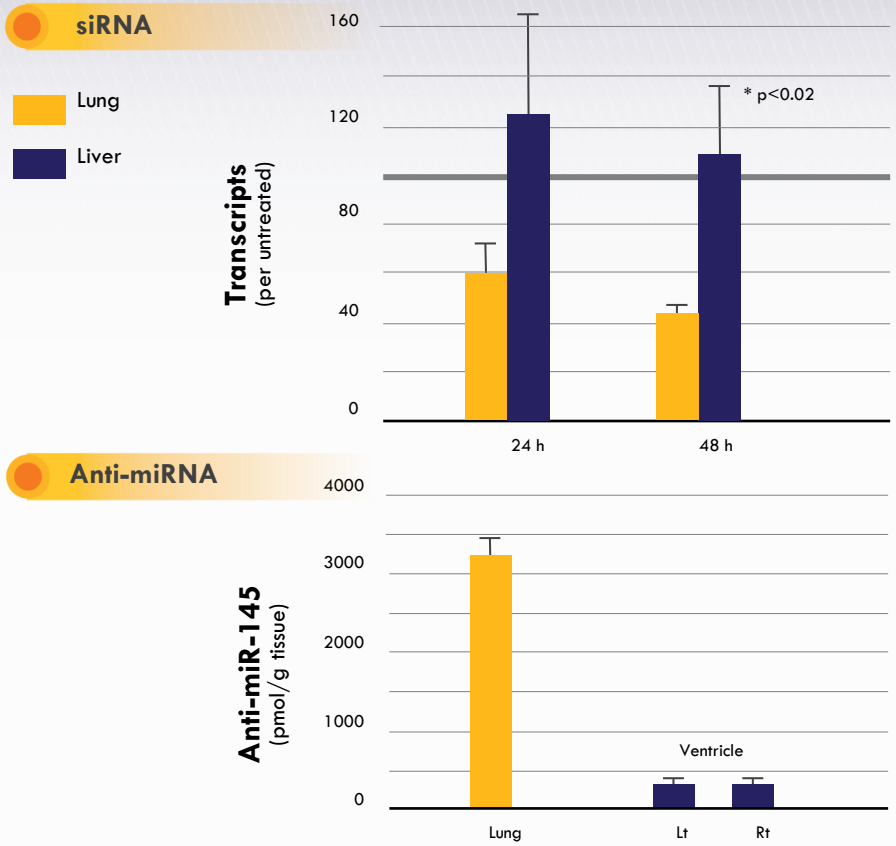
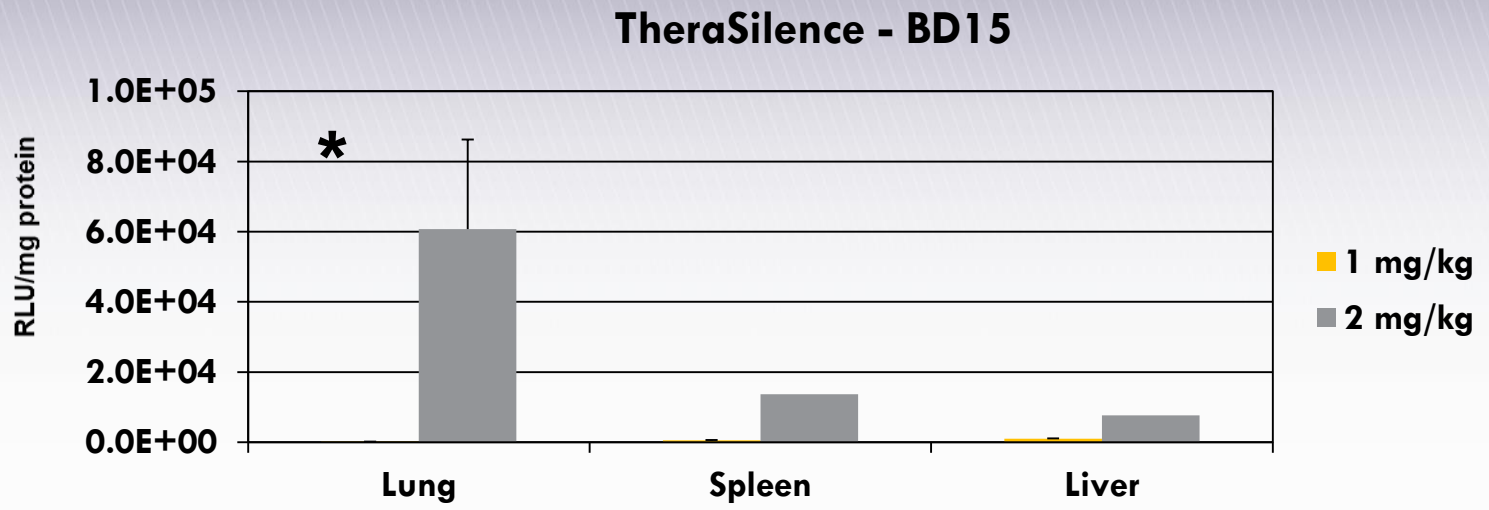
Unique Lung Delivery - Independent of RNA Type

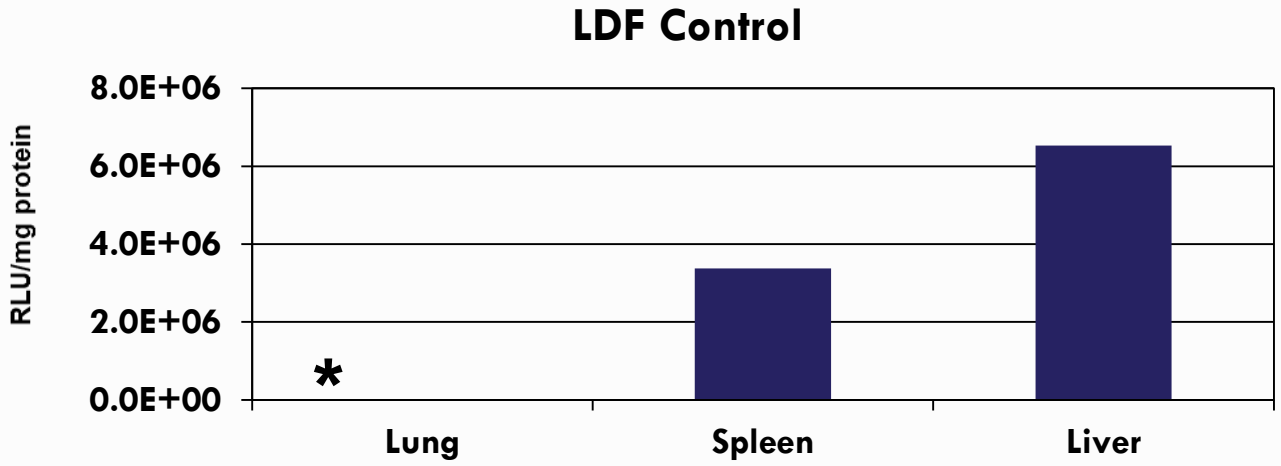


mRNA Tissue Luciferase Expression Levels

Non-Human Primate Study



*Average of 4 samples



2015 Goals

First Half

- ThermoDox Early Access Program in Europe for RCW Breast Cancer √
- GEN-1 Development Overview & FDA Acceptance of Neoadjuvant Ovarian Study √
- OS Sweep for HEAT Study as of 1/15/2015 – Subgroup HR = 0.629; Pvalue= 0.02 √
- TheraSilence (GEN-2) Non-Human Primate Data √
- Interim Data on US DIGNITY Phase II Study √
- Final Clinical Data from GEN-1 Phase 1b GOG Ovarian Study (ASCO) √

Second Half

- OS Sweep for HEAT Study as of 7/15/15 – Subgroup HR = 0.63; P_{value}= 0.0198 √
- ThermoDox Early Access Program Expanded for Primary Liver Cancer (HCC) √
- Initiate Patient Enrollment: GEN-1 Neo-adjuvant Ovarian Study
- Translational Data from Phase 1b GOG Ovarian Study (GEN-1 + Doxil)
- **1st Patient in the ThermoDox EAP in Europe**
- GEN-1: Pre-Clinical Efficacy Data in Ovarian Cancer and GBM
- **Collaboration Agreement(s) for TheraSilence RNA Delivery**
- IND Submission for Phase I Study of GEN-1 + Doxil + Avastin Ovarian Study
- Final Clinical Data from ThermoDox Phase 2 DIGNITY Study (San Antonio Breast)
- Initiate Patient Enrollment: ThermoDox Euro-DIGNITY Study

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Financial Overview

Cash & Investments (6/30/15)	$31 million
Estimated cash usage per month	~$1.4 million
Market Capitalization	$50 million
Common shares outstanding	23 million
Fully diluted shares outstanding	31 million
Avg Daily Trading Volume	~ 275,000

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