2018 Disruptive Growth and Healthcare Conference hosted by RHK Capital and Reed Smith

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These statements may be identified by the use of forward-looking words such as "anticipate," "planned," "believe," "forecast," "estimated," "expected," and "intend," among others. There are a number of factors that could cause actual events to differ materially from those indicated by such forward-looking statements. Such factors include, among other things, unforeseen changes in the course of research and development activities and in clinical trials; possible changes in cost, timing and progress of development, preclinical studies, clinical trials and regulatory submissions; Celsion's ability to obtain and maintain regulatory approval of any of its product candidates; possible changes in capital structure, financial condition, future working capital needs and other financial items; changes in approaches to medical treatment; introduction of new products by others; success or failure of our current or future collaboration arrangements, risks and uncertainties associated with possible acquisitions of other technologies, assets or businesses; the ability to obtain additional funds for operations; the ability to obtain and maintain intellectual property protection for technologies and product candidates and the ability to operate the business without infringing the intellectual property rights of others; the reliance on third parties to conduct preclinical studies or clinical trials; the rate and degree of market acceptance of any approved product candidates; possible actions by customers, suppliers, strategic partners, potential strategic partners, competitors and regulatory authorities; compliance with listing standards of The NASDAQ Capital Market; and those risks listed under "Risk Factors" as set forth in Celsion's most recent periodic reports filed with the Securities and Exchange Commission, including Celsion's Form 10-K for the year ended December 31, 2017.

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Clinical-Stage Oncology Company

Two Nanoparticle-Based Technology Platforms Driving Growth

LTSL

Lysolipid Thermally Sensitive Liposomes (LTSL) Known Chemotherapeutics

ThermoDox®

Targeted Doxorubicin Delivery

- Phase III Study Enrolling in Liver Cancer
- Phase II Study in Recurrent Chest Wall Breast Cancer

TheraPlas

Synthetic Non-viral Vector DNA Plasmids Coded for Therapeutic Proteins

GEN-1

Localized Interleukin-12 (IL-12) Immunotherapy

- Neoadjuvant Study in 1st Line Ovarian
- Phase II Ready

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Celsion Proprietary Therapeutic Pipeline

Capital-Efficient Drug Development

	INDICATION	PRODUCT CANDIDATE	PRE-CLINICAL PHASE 1-2 PHASE 3
Clinical	**Primary Liver Cancer**	ThermoDox/OPTIMA Study	Enrolling Phase III ~85% Complete
Clinical	**Ovarian Cancer**	GEN-1/OVATION II Study	Initiating Phase I/II
Pre-Clinical	**Non Muscle Invasive Bladder Cancer**	ThermoDox	Efficacy/Safety/Toxicology Complete
Pre-Clinical	**Glioblastoma**	GEN-1	Efficacy/Safety/Toxicology Complete

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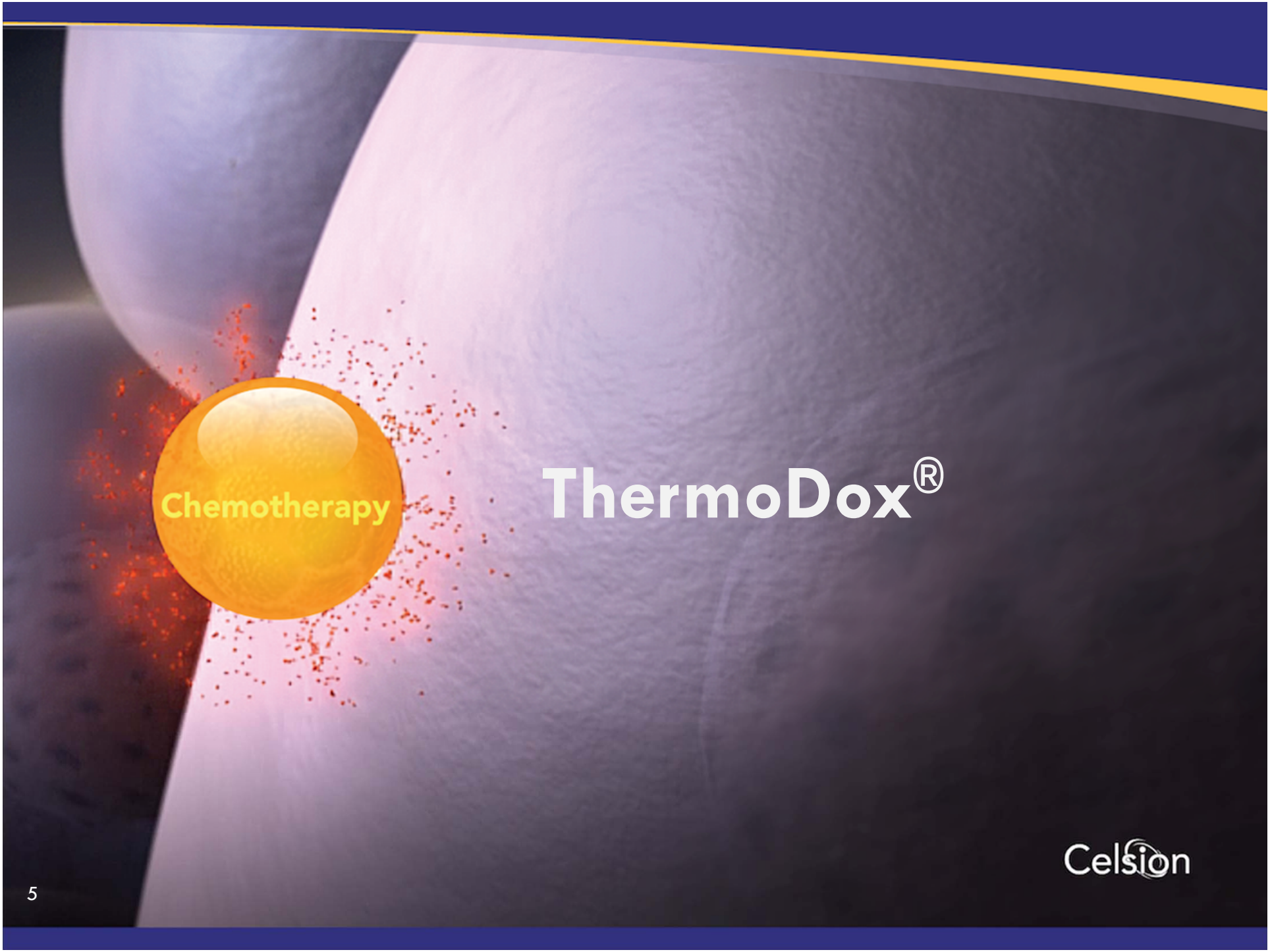
Chemotherapy
ThermoDox®
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Hepatocellular Carcinoma (HCC)

High Global Incidence and Mortality

- **5th most prevalent**
  - 850,000 global incidence growing 5% annually
  - By 2030, expected to be the #3 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 3 years[1]
  - Curative surgery is possible in less than 20% of patients[1]
- **Current local therapies include:**
  - Radiofrequency Ablation (RFA), transarterial chemoembolization (TACE) and radiation
  - RFA is the dominant treatment with local recurrence rates >50% for lesions >3 cm

Addressable Market Opportunity >200K Patients

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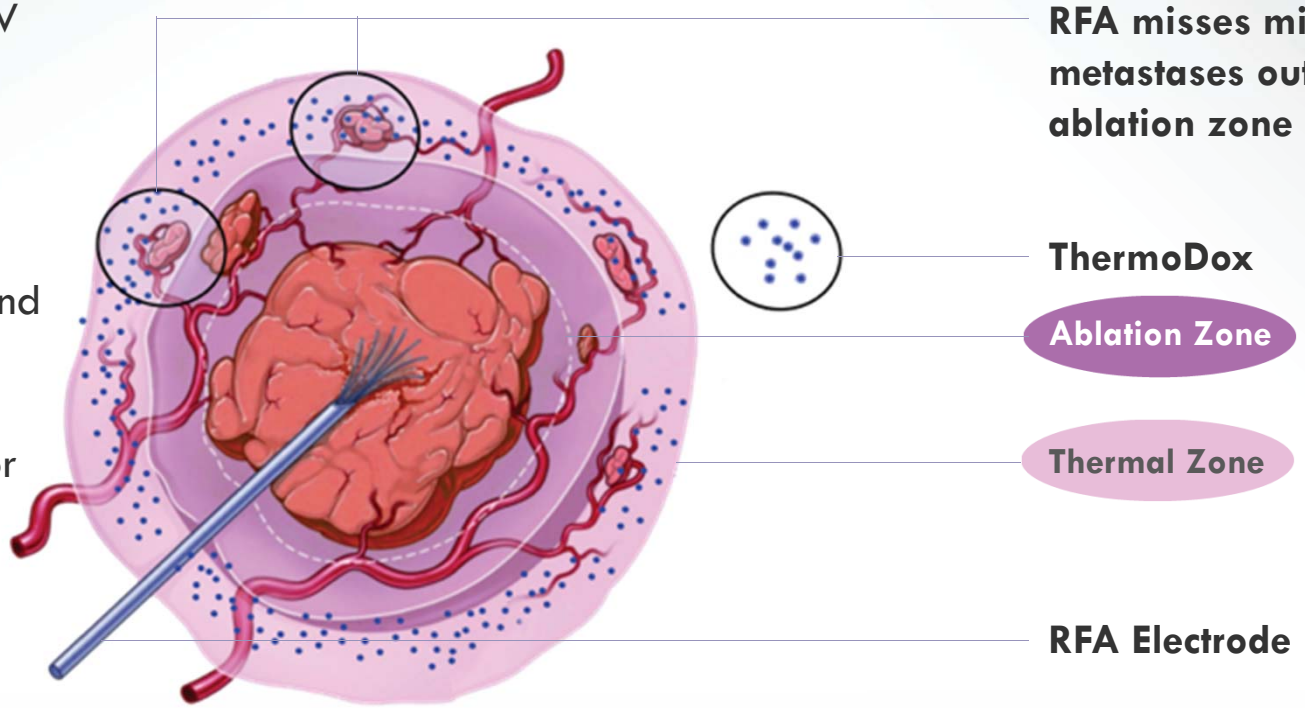
[1] *Journal of Hepatology 2012 vol. 56 | 908-943*

ThermoDox + Radiofrequency Ablation

Designed to Address RFA Limitations by Expanding Treatment Zone

- ThermoDox infused IV ~15 minutes prior to radiofrequency ablation
- RFA ablates tumor and creates a "Thermal Zone" in margin surrounding the tumor
- Doxorubicin is released in the "Thermal Zone" expanding treatment area and killing the metastases outside the ablation zone



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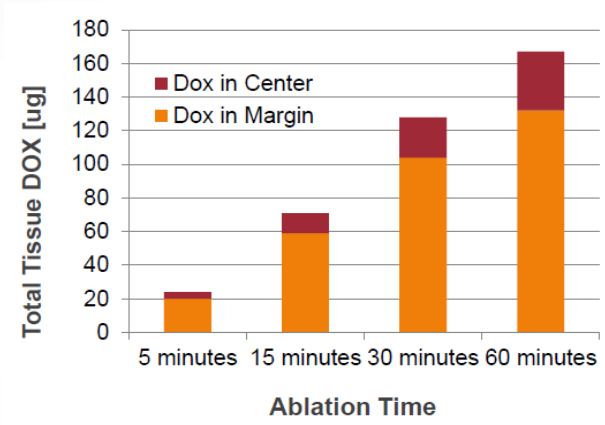
HEAT Study: RFA Dwell Time Matters

701-Patient HEAT Study Results Inform ThermoDox+ RFA Clinical Plan

- Pre-specified analysis of completed HEAT Study data showed that patients with smaller HCC lesions (3-5 cm) appeared to have better outcomes with ThermoDox
- Dwell time effect on increasing local doxorubicin demonstrated in a computational model and an *in-vivo* porcine model.*

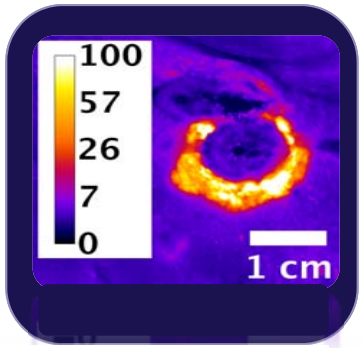
Computational Model

Doxorubicin Concentrations

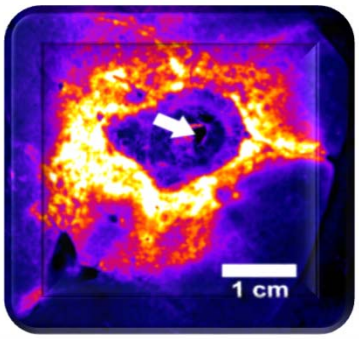


Porcine Model

More RFA time = More local Dox deposition



15 Min Dwell Time



45 Min Dwell Time

- Multivariate analysis substantiates RFA dwell time with ThermoDox as the factor correlating to significant improvement in overall survival

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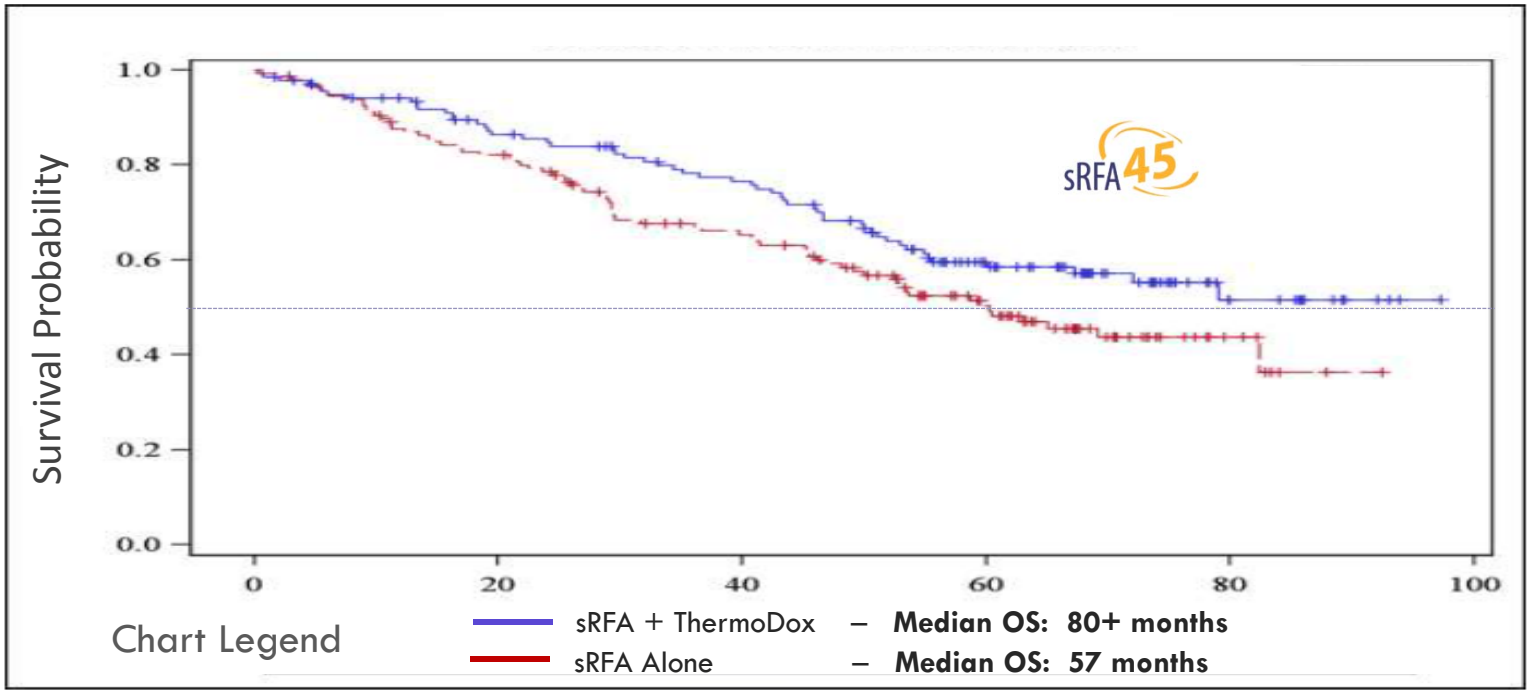
** Gasselhuber, et al, Int J. Hyperthermia 2010 & Swensen, et al, Plos One, 10/15*

HEAT Study Sub-Group Analysis

When standardized for dwell time and number of lesions, patients given ThermoDox + RFA demonstrated a two-year improvement in overall survival*

285 Patients With Standardized RFA >45 Minutes (*sRFA*)



Final OS Analysis as of 7/15/2016:	HR = 0.65 (95% CI 0.43 - 0.93) *P* Value = 0.02

* *Tak, et al CCR 10/10/17*

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RFA Dwell Time Matters

Independent NIH Analysis Supports Conclusions from HEAT Study

Evaluated RFA burn time per tumor volume (min/ml) for correlation with clinical outcome

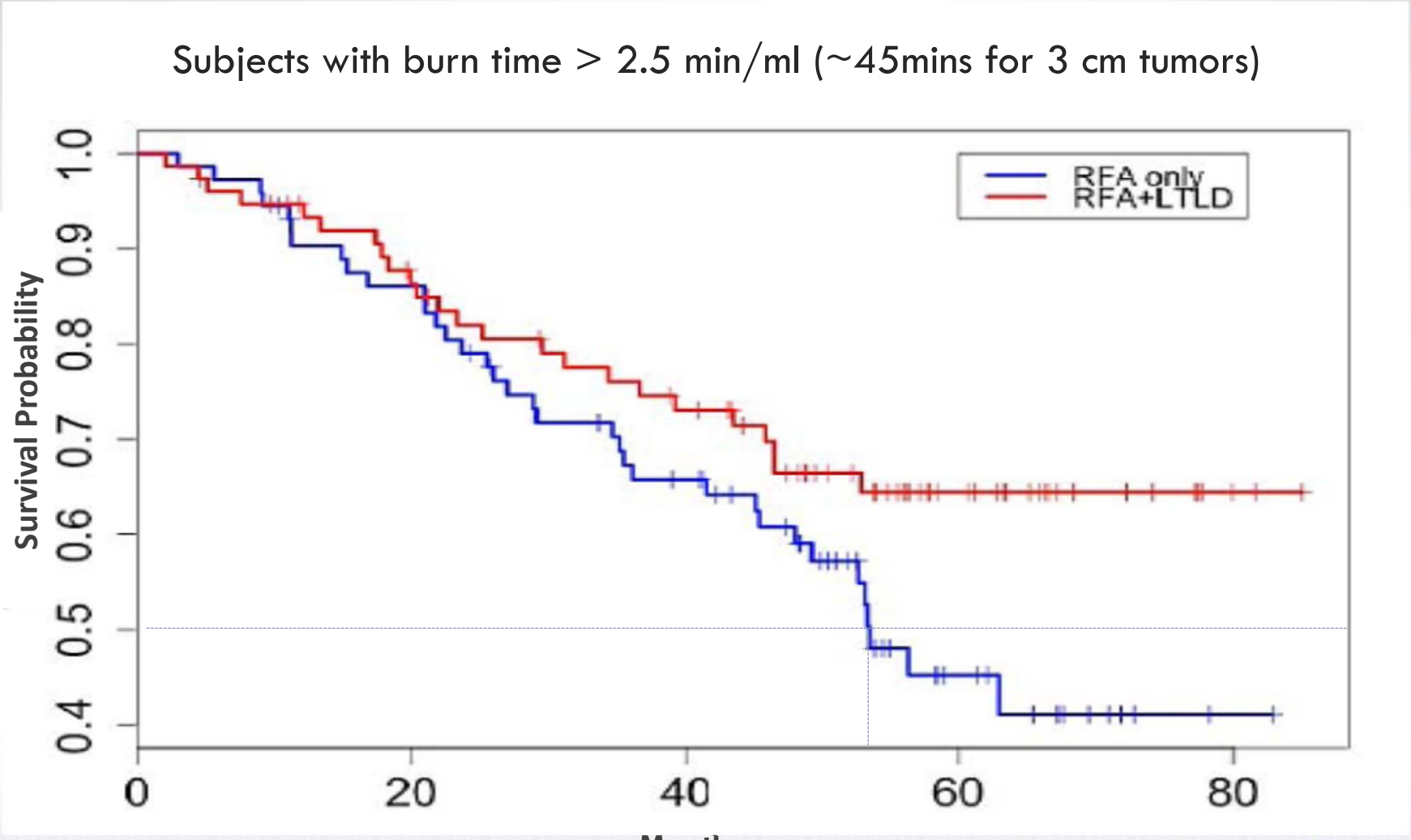
- **Overall Findings**
  Increase in *burn time* per tumor volume improved Overall Survival (OS) in ThermoDox® + RFA patients compared to RFA only patients, n=437

- **For all single lesion RFA + ThermoDox® patients:**
  One unit increase in RFA duration per tumor volume improved OS by 20%, n=227
  - More dramatic differences in subgroup of patients with RFA burn times per tumor volume > 2.5 minutes/ml
  - Cox multiple covariate analysis showed OS to be significant (p=0.038, HR=0.85)

- **For all single lesion RFA-only patients:**
  - Burn time per tumor volume did not have a significant effect, n=210

NIH Analysis Supports HEAT Study Sub-Group

Subjects with burn time > 2.5 min/ml (~45mins for 3 cm tumors)



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ThermoDox + RFA HEAT Study Analysis

Relative to TACE – Intermediate HCC Patient Population

	Study	Lesion size	N	Median OS (mos.)	Year 1 (%)	Year 2 (%)	Year 3 (%)
	HEAT Study ITT Population	Overall: 2.7 - 7.5 cm Mean: 4.2 cm Median: 4 cm	701	53 mos.	85%	76%	64%
HEAT Study Subgroup	**ThermoDox® + RFA ≥ 45 min.**	**Overall: 2.7 - 6.9 cm Mean: 4.3 cm Median: 4.2 cm**	**138**	**80+ mos.**	**94%**	**85%**	**77%**
HEAT Study Subgroup	RFA alone time ≥ 45 min.	Overall: 3 - 6.9 cm Mean: 4.2 cm Median: 3.9 cm	147	57 mos.	88%	79%	69%
	Ikeda et al (TACE) 2013	Median: 3.9; range 1-11	99	37 mos.	90%	75%	NR
		> 3.0	64	NR	NR	66%	NR
	Burrel (DEB TACE) 2012	BCLC A	41	54 mos.	90%	NR	68%
		BCLC B	63	48 mos.	88%	NR	64%

DEB TACE – Doxorubicin Eluding Beads (DEB) Transarterial Chemoembolization (TACE)

Review Article

Cancer September 15, 2014

The Clinical Management of Hepatocellular Carcinoma in the United States, Europe, and Asia

A Comprehensive and Evidence-Based Comparison and Review

Zhi Ven Fong, MD; and Kenneth K. Tanabe, MD

Hepatocellular carcinoma (HCC), the most common primary malignancy of the liver, represents 1 of the leading causes of cancer deaths in the world with an estimated 21,670 deaths in the United States in 2013. In contrast to other malignancies, there is an array of treatment options for HCC involving several specialties in the multidisciplinary care of the patient. Consequently, vast heterogeneity in management tendencies has been observed. The objective of this report was to review and compare guidelines on the management of HCC from the United States (National Comprehensive Cancer Network), Europe (European Association for the Study of the

TABLE 5. Survival Outcomes 3 Years After Surgical Resection and Radiofrequency Ablation of Hepatocellular Carcinoma Based Dichotomized Based on Tumor Size

	3-Year OS Rate, %			3-Year DFS Rate, %		
Tumor Size, cm	Resection	RFA	*P*	Resection	RFA	*P*
≤3	79	50	NS	67	34	NS
>3	59	24	.007	43	12	.003

Abbreviations: DFS, disease-free survival; NS, nonsignificant; OS, overall survival; RFA, radiofrequency ablation.

HEAT Study showed 3-Year OS Rate of 77% (July 2015)

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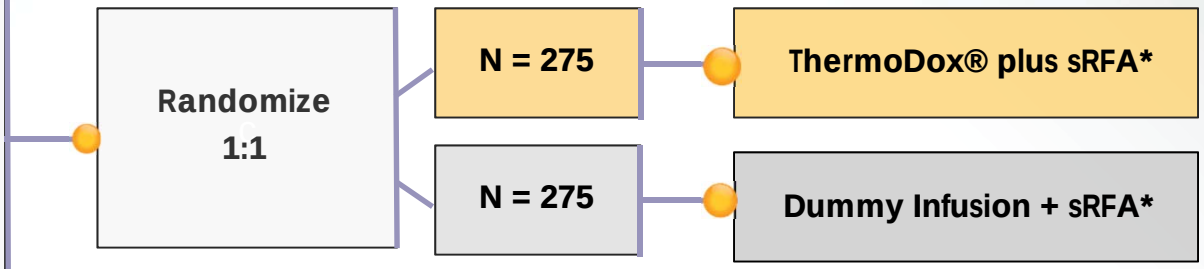
Phase III OPTIMA Study Design

Applying Learnings From HEAT Study to OPTIMA

- **~ 85% Enrolled**
- **Completed 2nd half 2018**

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
- RFA Technique (Percutaneous, Laparoscopy, or Surgical)



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

~ 65 Clinical Sites in 14 Countries

1st Interim: Q1-2019
2nd Interim: Q4-2019

* sRFA45 **Standardized Radiofrequency Ablation >45 minutes**

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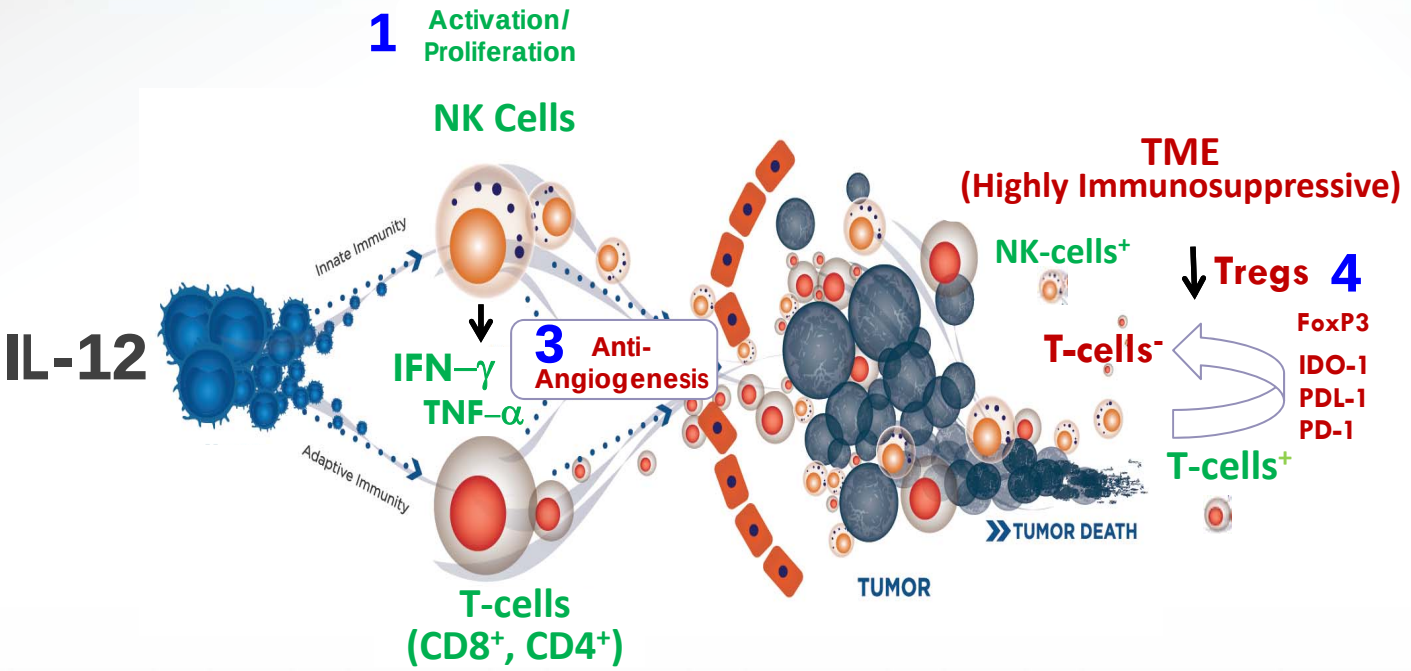
GEN-1 IL-12

Immuno-Oncology Program

Interleukin-12

A Powerful Immune-Modulating Agent; Multiple Mechanisms

Four Distinct Mechanisms of Immune Modulation by IL-12



Red Font: Immune suppressive factors

Green Font: Immune activation factors

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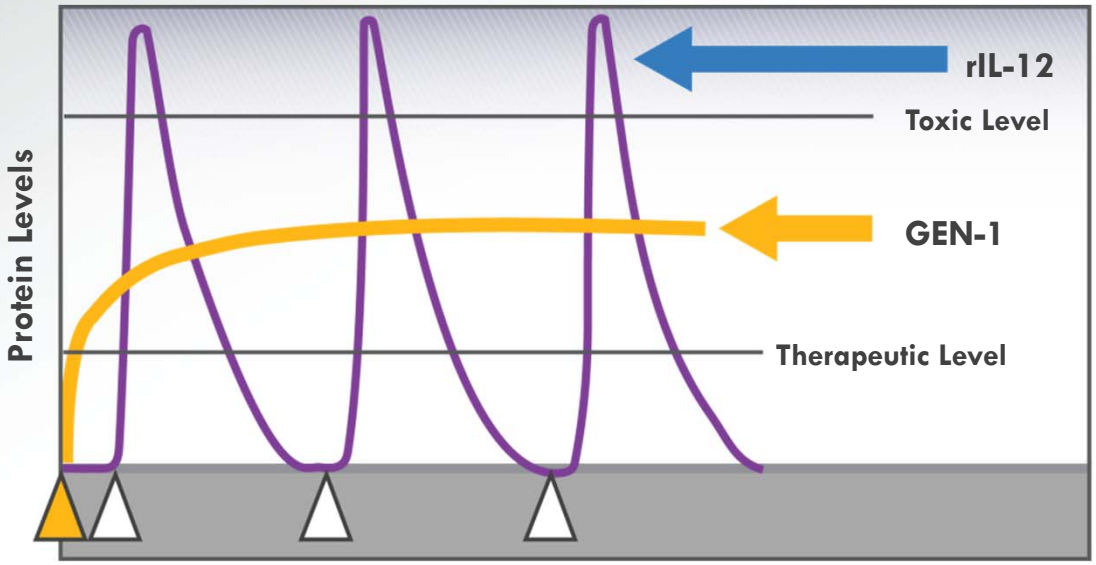
GEN-1: Designed to Address IL-12 Toxicity

Rationale for Local Therapy with GEN-1 DNA Nanoparticles



Poor kinetics requires frequent and high doses of rIL-12

GEN-1 provides persistent local therapy

GEN-1 addresses rIL-12 Poor Pharmacokinetics (pK)

- Loco-regional production of IL-12 avoids toxicities and poor pK of systemic rIL-12
- Persistent local delivery of IL-12 lasts up to one week and
- Dosing can be repeated
- Potential utility for long-term maintenance therapy

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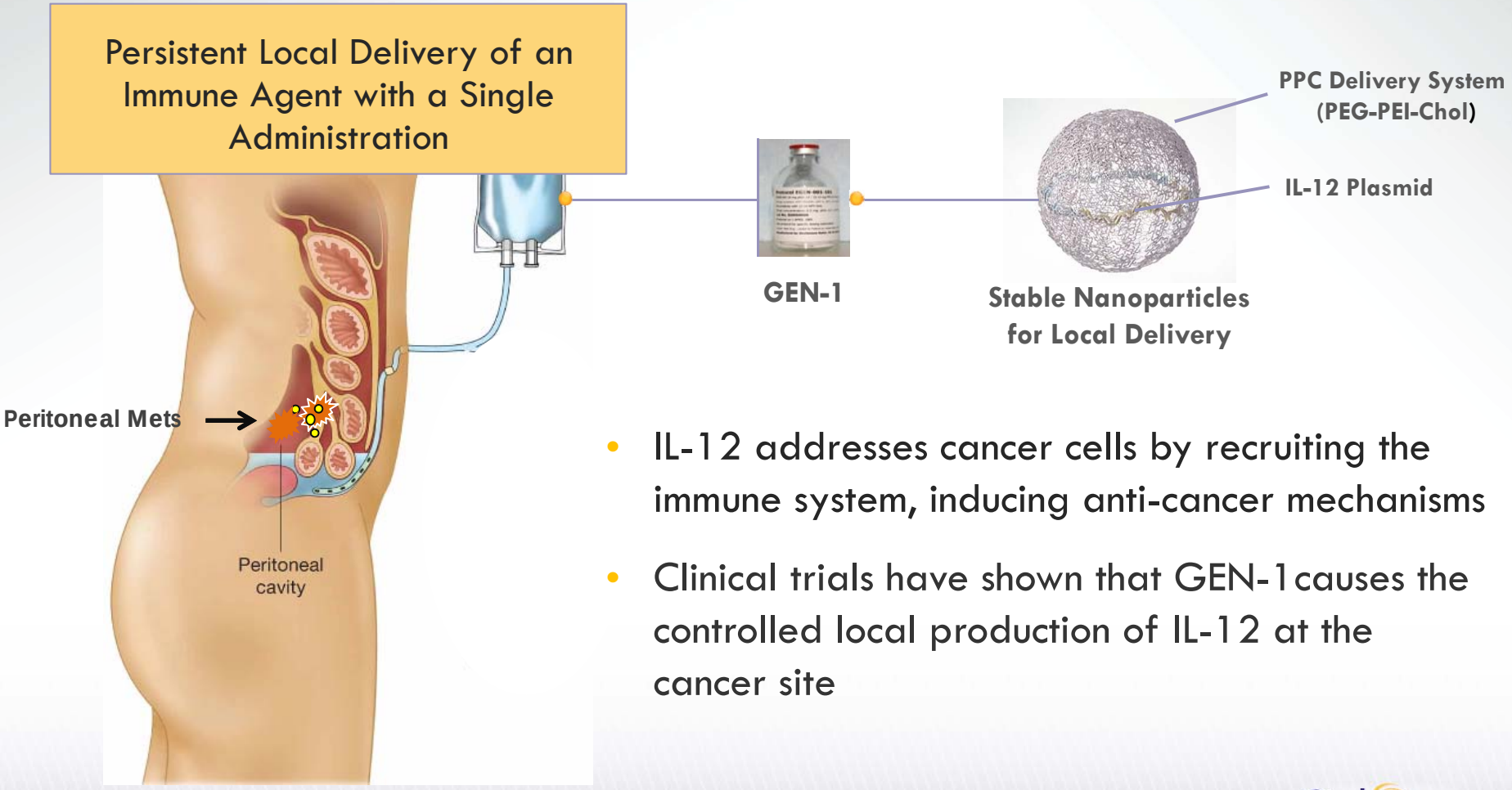
GEN-1 for Treatment of Ovarian Cancer

Local Immunotherapy

Persistent Local Delivery of an Immune Agent with a Single Administration



- IL-12 addresses cancer cells by recruiting the immune system, inducing anti-cancer mechanisms
- Clinical trials have shown that GEN-1causes the controlled local production of IL-12 at the cancer site

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Ovarian Cancer

High Global Incidence and Mortality[1]

- **8th most diagnosed cancer among women**
  - 225,000 annual incidence worldwide
  - 22,280 in U.S. and 100,000 in developed countries
  - 14,240 deaths from ovarian cancer in the U.S. (2015)
- **5th highest mortality among women**
  - 5-year survival rate for all stages is >50%
  - Survival rate dramatically reduced if not localized cancer
  - 15% diagnosed with localized cancer, eligible for potentially curative surgery
- **Local therapies for ovarian cancer**
  - Ovarian cancer is not diagnosed early – over 60% of women diagnosed with Stage III/IV
  - Most common site of recurrence in abdomen– importance of intra-peritoneal-administered therapy

Addressable Market Opportunity >100K Patients

[1] *Sources: Cancer Statistics, American Cancer Society; Globocan; SEER database*

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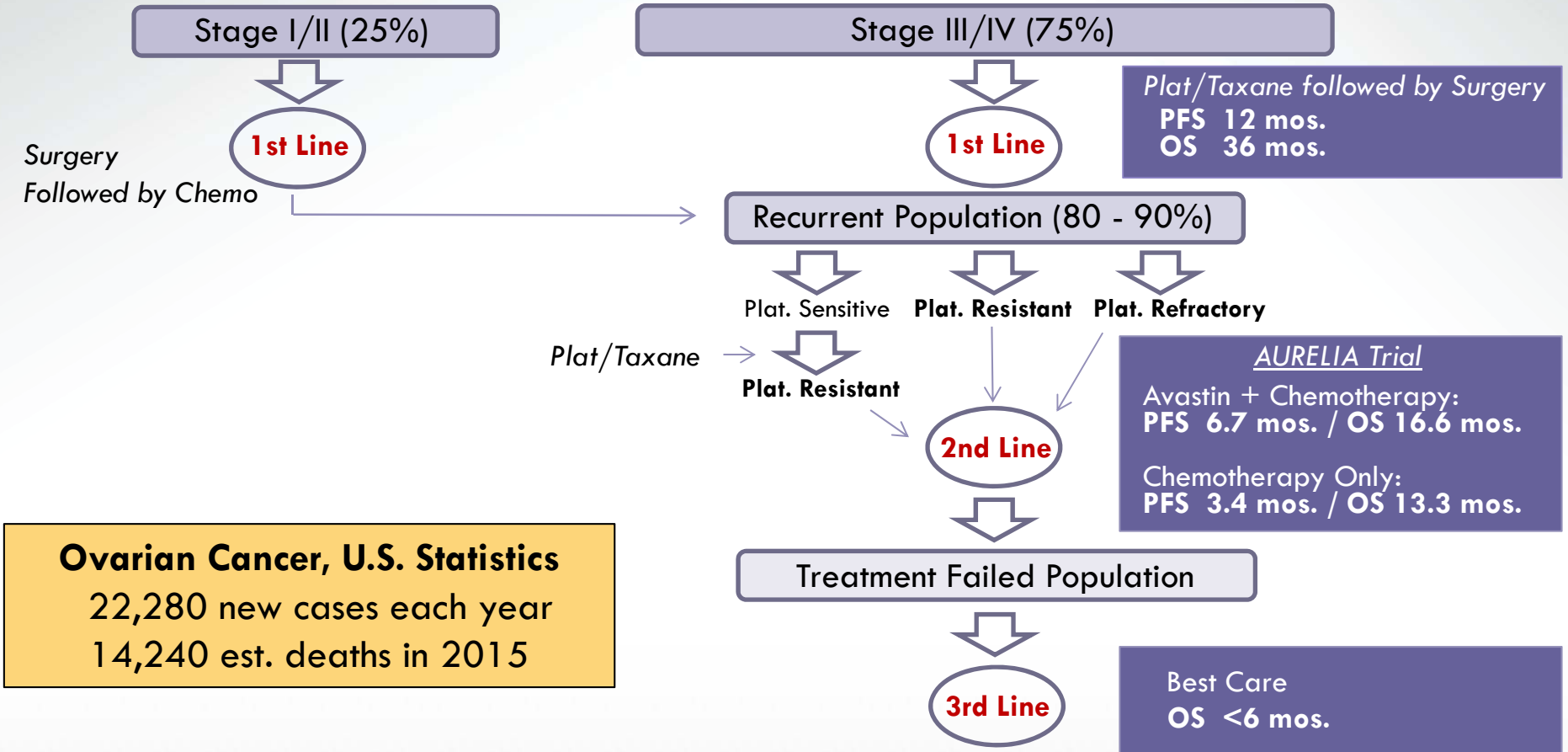
Ovarian Cancer Treatment Path



Ovarian Cancer, U.S. Statistics

22,280 new cases each year

14,240 est. deaths in 2015

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Clinical Experience With GEN-1 in Ovarian Cancer

- Multiple trials completed, 75 patients treated
- Shown to be well-tolerated
- Clear evidence of biological activity & clinical benefit have been demonstrated
- Maximum Tolerated Dose has not been reached

Study	Mono/Combo	Study Phase	Disease	N
GEN-1-101	**Monotherapy**	**I**	**Platinum-resistant**	**13**
GOG-170Q*	**Monotherapy**	**II**	**Platinum-resistant**	**20**
GEN-1-201	**+ Carboplatin/Docetaxel**	**I**	**Platinum-sensitive**	**13**
GOG-9928*	**+ Doxil**	**Ib**	**Platinum-resistant**	**14**
OVATION	**+ Carboplatin/Taxol**	**I**	**Newly diagnosed**	**15**

* Studies conducted by NCI-NRG (Gynecologic Oncology Group - GOG)

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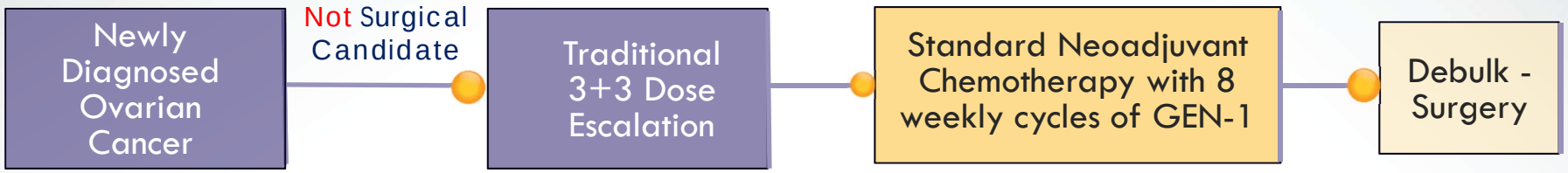
GEN-1 Phase I Study

1st Line in Ovarian Cancer

OVATION I Study



Neoadjuvant Study in Newly Diagnosed Ovarian Cancer Patients	To determine safety, dose, and feasibility in target patient population
Primary Endpoint	Optimal Therapeutic Dose
Secondary Endpoints	pCR, PFS, ↑IFNγ, ↑IL-12, ↓VEGF and Tumor-specific T-cell response CD4+,CD8+

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OVATION I Study

Final Efficacy Results

	36 mg/m²	47 mg/m²	61 mg/m²	79 mg/m²	
RECIST Response	**Cohort 1 (n=3)**	**Cohort 2 (n=3)**	**Cohort 3 (n=3)**	**Cohort 4 (n=5)**	**Total (n=14)**
Complete Response	1, 33.3%	0, 0%	0, 0%	1, 20%	2, 14%
Partial Response	0, 0%	3, 100%	3, 100%	4, 80%	10, 72%
Stable Disease	2, 66.6%	0, 0%	0, 0%	0, 0%	2, 14%
Interval Debulking Status	**Cohort 1 (n=3)**	**Cohort 2 (n=3)**	**Cohort 3 (n=3)**	**Cohort 4 (n=5)**	**Total (n=14)**
R0	2, 66.6%	0, 0%	2, 66.6%	5, 100%	9, 64.3%
R1	1, 33.3%	2, 66.6%	0, 0%	0, 0%	3, 21.4%
R2	0, 0%	1, 33.3%	1, 33.3%	0, 0%	2, 14.3%
Pathological Response	**Cohort 1 (n=3)**	**Cohort 2 (n=3)**	**Cohort 3 (n=3)**	**Cohort 4 (n=5)**	**Total (n=14)**
cPR	1, 33.3%	0, 0%	0, 0%	0, 0%	1, 7%
microPR	1, 33.3%	2, 66.6%	1, 33.3%	3, 60%	7, 50%
macroPR	1, 33.3%	1, 33.3%	2, 66.6%	2, 40%	6, 43%

- All patients showed a > 90% drop in their CA-125 protein levels
- 50% reduction in CA-125 levels maintained for > 2 weeks is considered a CA-125 Responder

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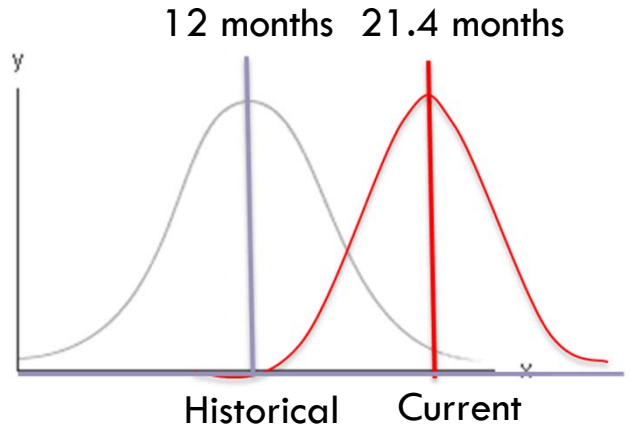
OVATION Study

Progression Free Survival Estimates

Current Estimated Median PFS ---------- 21.4 months
Historical Estimated PFS ---------- 12.0 months



Cohort (mg/m^2)	PFS	Progression
36	19.25	3/3
47	22.6+	0/3
61	18.7+	1/3
79	16.2+	2/5*

* One patient dropped out after 2 treatments and progressed
\+ Data not mature

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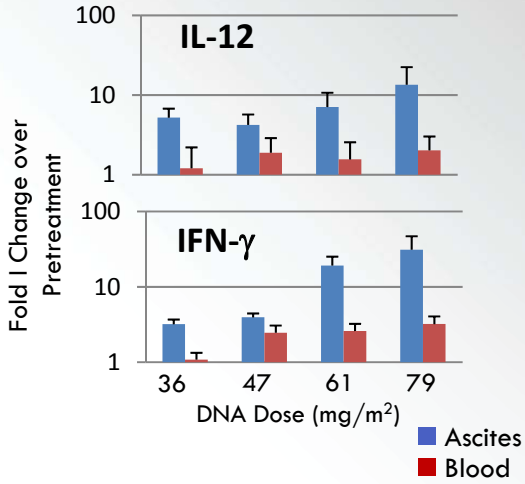
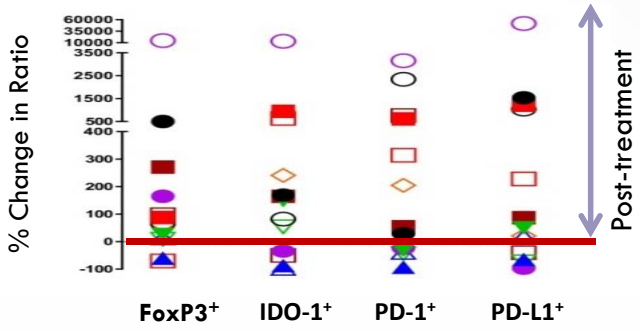
Shift in TME: Favoring Immune Stimulation Over Suppression Following GEN-1 + NACT

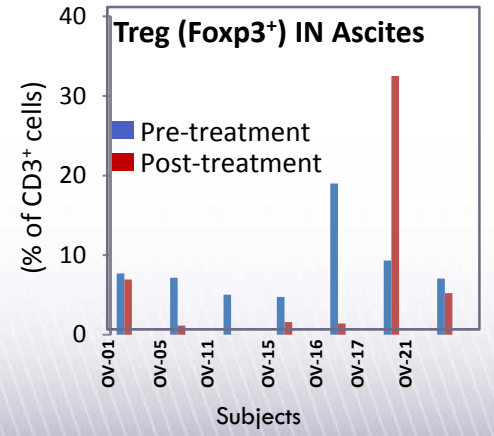
- Dose dependent local increase in immune cytokines, IL-12 and IFN-γ, at the tumor site (ascites) but not as much in blood



- Increase in the ratio of immunostimulatory T-cells ($CD8^+$) to immunosuppressive T-cell signals (FoxP3+, IDO-1+, PD-1+, PDL-1+) in approximately 70% of patients



- Decrease in immuno-suppressive cells population in ascites in a majority of patients



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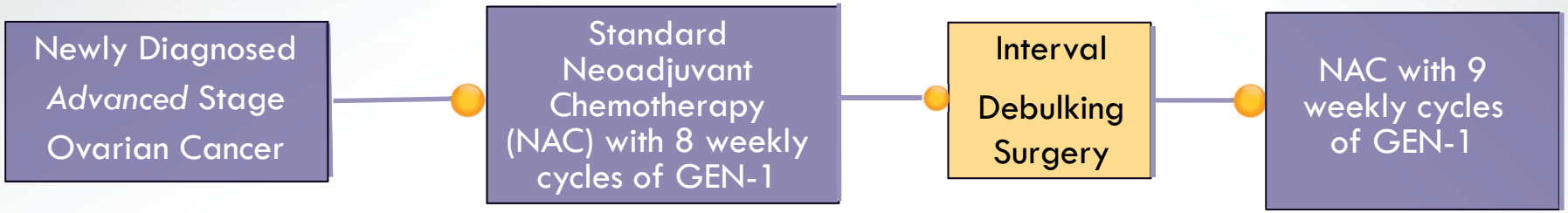
GEN-1 Phase I/II Study

1st Line in Advanced Ovarian Cancer

OVATION II Study



Neoadjuvant Study in Newly Diagnosed Advanced Stage Ovarian Cancer Patients (FIGO IIIC & IV)	To determine early efficacy, biological activity and safety with NAC in advanced ovarian cancer
Primary Endpoint	Progression Free Survival
Secondary Endpoints	Objective Clinical Response, Pathological Complete Response, Surgical Response, Safety, Biological Activity, and Serum CA-125 Concentrations

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GEN-1 Phase I/II Study

OVATION II Study Design

Arm	Treatment	Before IDS									Interval Debulking Surgery	After IDS								
		C1D1	C1D8	C1D15	C2D1	C2D8	C2D15	C3D1	C3D8	C3D15		C4D1	C4D8	C4D15	C5D1	C5D8	C5D15	C6D1	C6D8	C6D15
Arm 1	Carboplatin	X			X			X			X	X			X			X		
	Paclitaxel	X			X			X				X			X			X		
	GEN-1		X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X
Arm 2 (control)	Carboplatin	X			X			X			X	X			X			X		
	Paclitaxel	X			X			X				X			X			X		
	Placebo																			

- 130 patients
- Primary Endpoint = PFS
- Subjects randomized 1:1 on standard neoadjuvant chemotherapy (NAC) vs. standard NAC + GEN-1

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Milestones & Financials

Major Milestone Events & Over 2 years of Cash

	2018				2019				2020			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
ThermoDox												
OPTIMA Study Phase III Trial		DMC Review After 75% Enrollment	Enrollment Complete		1st Interim Efficacy (118 events)			2nd Interim Efficacy (158 events)			Final OS Endpoint (197 events)	
GEN-1												
OVATION I Phase IB Dose Escalating Trial	Interim PFS Data from Cohorts 1-4		Final PFS Data from Cohorts 1-4									
OVATION II Phase I/II Trial	Final IND Submission	Initiate Enrollment Phase I	*	Data from Dose Escalating Phase I Portion	Initiate Enrollment Phase II	*	*	Complete Enrollment 130 pts	*	*	Final PFS Data from Phase II	

* Open Label Design Will Allow For Periodic Reporting of Results

$25.5M in cash → Q3 2019

$10M NOL Sale → Q2 2020

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Financial Overview

Cash & Investments as of 1/10/18	$25.5 million
Estimated cash usage per month	~$1.33 million
Market Capitalization	$42 million
Common shares outstanding	17.7 million
Fully diluted shares outstanding	21.5 million
Avg. Daily Trading Volume	~ 350,000

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Corporate Information

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