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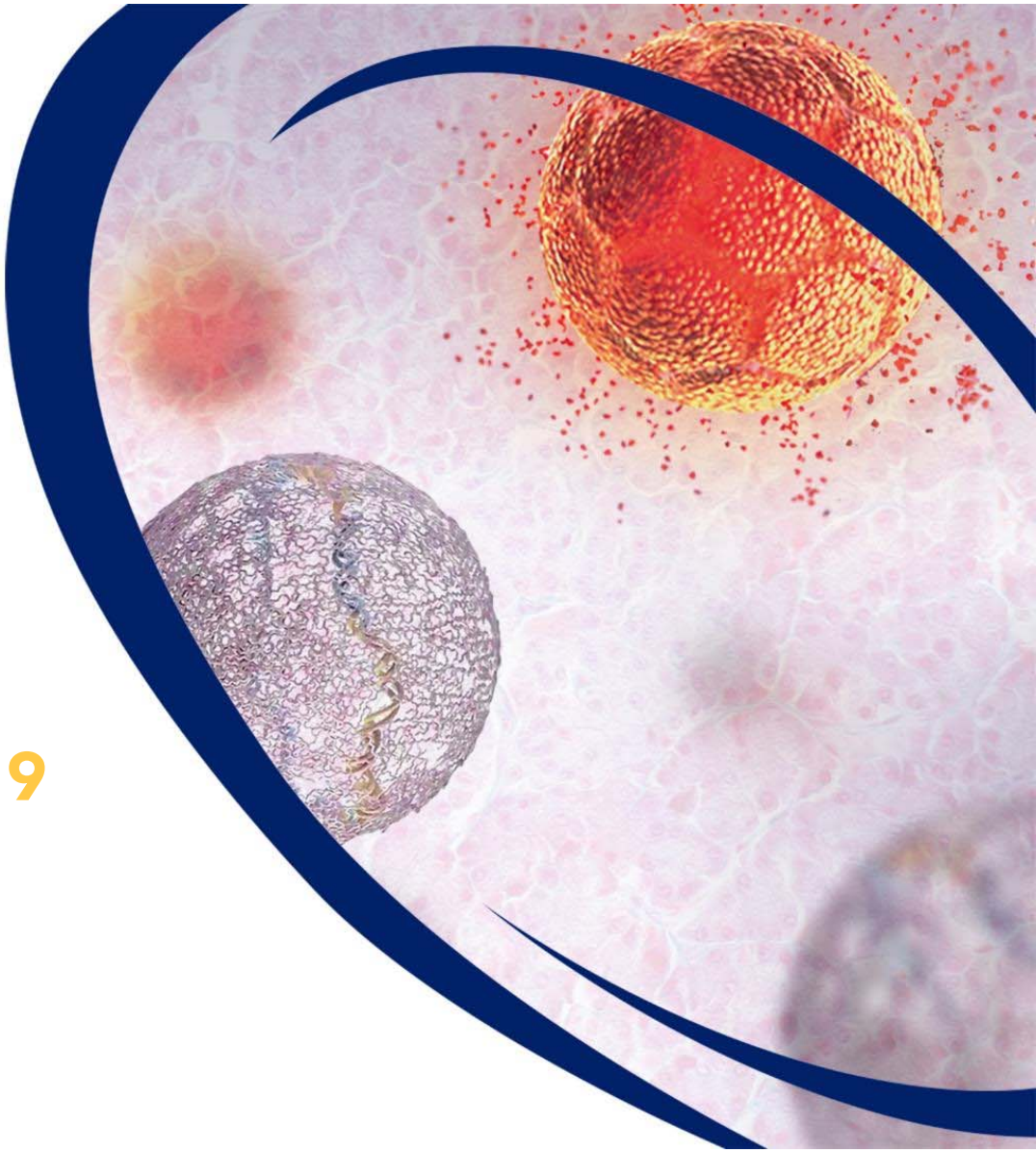
Corporate Presentation

ThinkEquity Conference 2019



Safe Harbor Statement

This presentation and any statements made for and during any presentation or meeting contain forward-looking statements related to Celsion Corporation ("Celsion") under the safe harbor provisions of Section 21E of the Private Securities Litigation Reform Act of 1995 and are subject to risks and uncertainties that could cause actual results to differ materially from those projected.

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, 2018.

While the list of factors presented here is considered representative, no such list should be considered to be a complete statement of all potential risks and uncertainties. Unlisted factors may present significant additional obstacles to the realization of forward-looking statements. Forward-looking statements included herein are made as of the date hereof, and Celsion does not undertake any obligation to update publicly such statements to reflect subsequent events or circumstances except as required by law.

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2019: A Year Of Extraordinary Opportunity

Two distinct and innovative technology platforms at clinical stage

LARGE COMMERCIAL OPPORTUNITY

Billion dollar commercial opportunities each in HCC/Primary Liver and Ovarian Cancer where the need for effective treatments remains

SIGNIFICANT MILESTONES

OPTIMA Study, a global Phase III trial in HCC/Primary Liver Cancer, with 1st interim data expected in second half of 2019

OVATION 2 Study, a Phase I/II trial in Ovarian Cancer, with Phase I data expected in second half of 2019

FINANCIAL STABILITY

$30 million in cash provides 2-year operating runway

Clean Cap Structure

- Less than 20 million shares outstanding
- Minimal warrant overhang

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Two Novel Nanoparticle-Based Technology Platforms

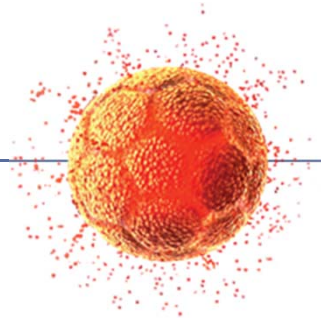
Both Poised for Success

LTSL

Lysolipid Thermally Sensitive Liposomes for Delivery of Known Chemotherapeutics

ThermoDox®

Targeted Doxorubicin Delivery



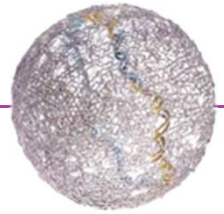
Orphan Drug Designation: US and EU
Fast Track for HCC in US

TheraPlas

Non-Viral Vector Delivers DNA Plasmids Coded for Therapeutic Proteins

GEN-1 Immunotherapy

Localized Interleukin -12 (IL -12) Immunotherapy



Orphan Drug Designation: US
EU Filing in Progress

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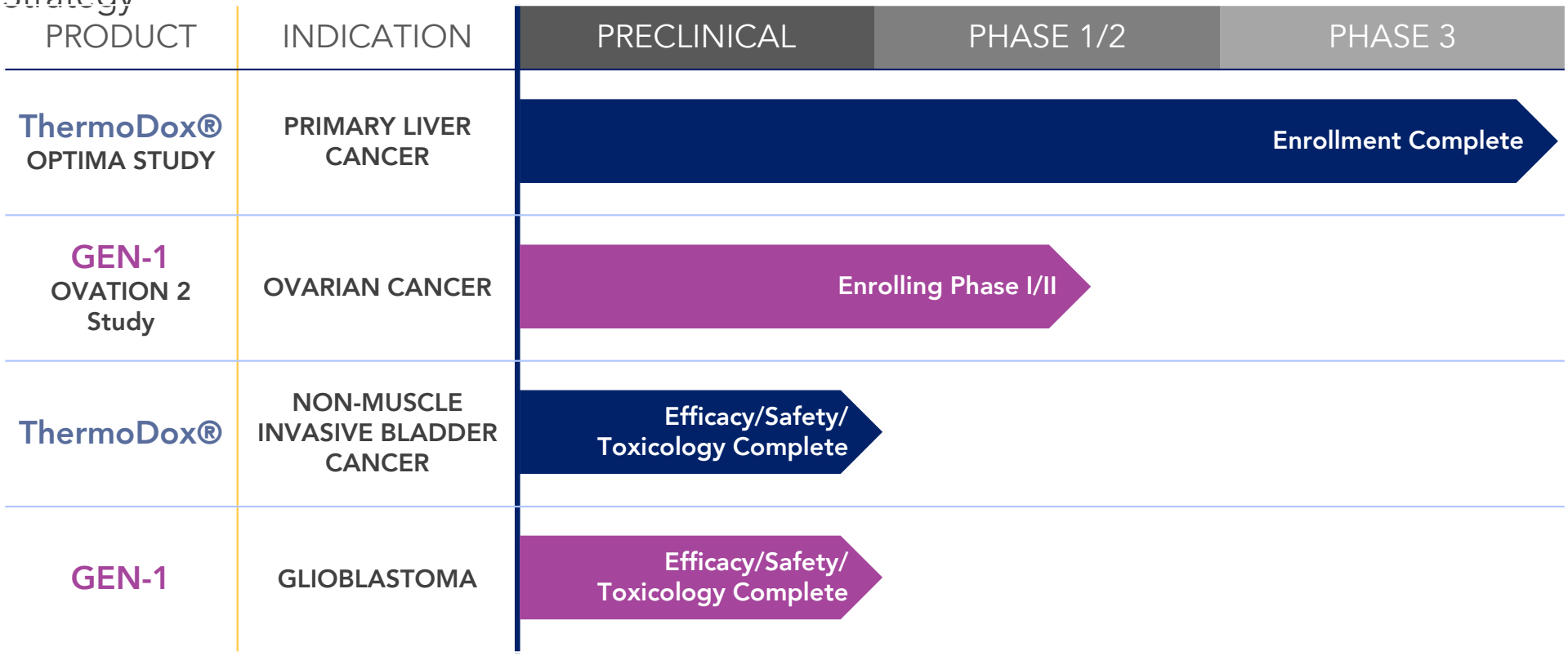
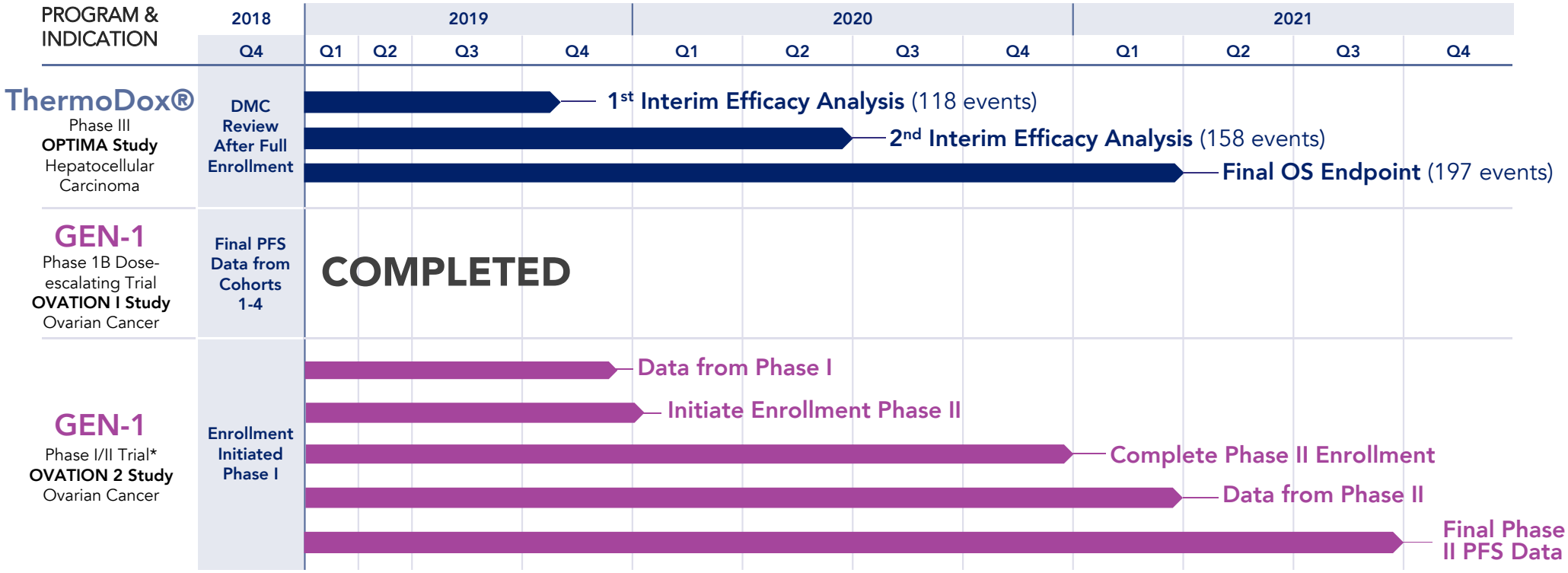
Celsion Pipeline

Focused Drug Development Strategy



Advanced Stage Clinical Development Programs

Milestone Events 2019-2021



*Open-label design will allow for periodic reporting of results.

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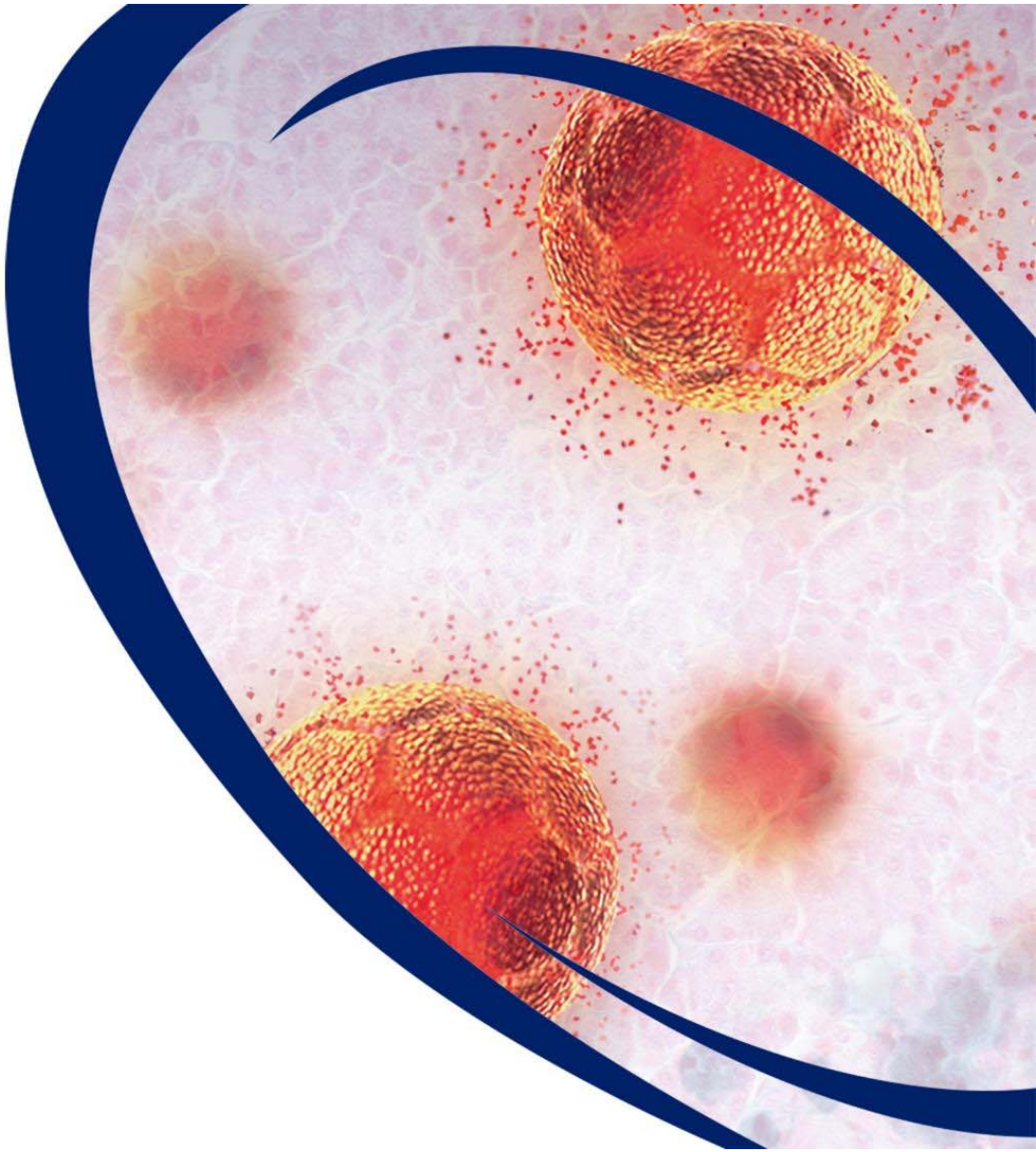
ThermoDox®

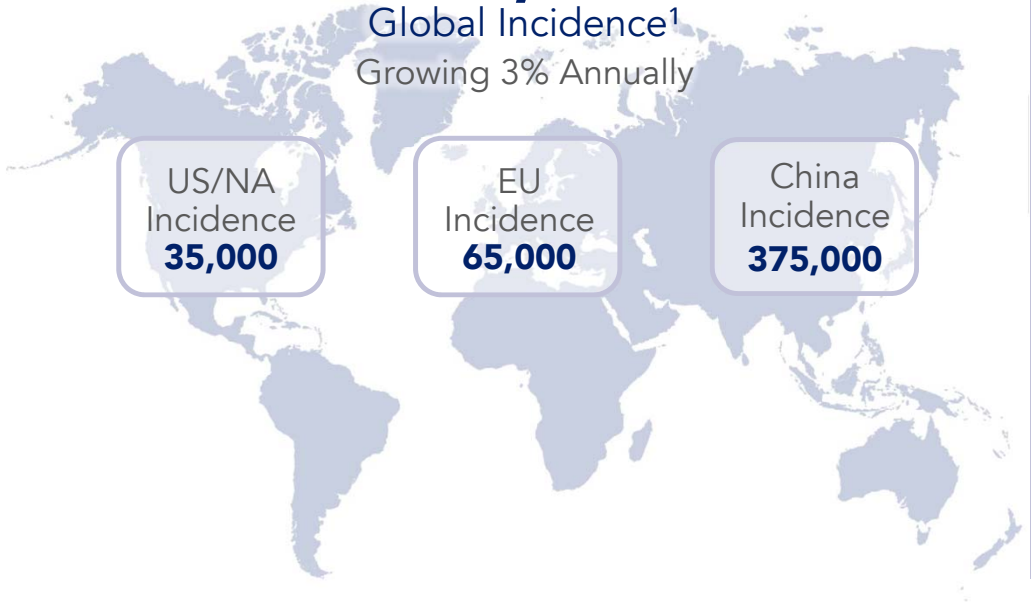
CHEMOTHERAPY



First Target: Hepatocellular Carcinoma

High Global Incidence With High Mortality

755,000
Global Incidence[1]
Growing 3% Annually



4th Highest Mortality
of all Cancers

Median survival from time of diagnosis	**< 3 years**[2]
5-year survival rate	**< 10%**
Early- and Intermediate-stage patients eligible for curative surgery	**< 20%**[2]

Few curative treatment options in early- and intermediate-stage patients

Addressable Market Opportunity for ThermoDox: **> 200K Patients across US, EU, and Asia***

[1] Incidence Data Source: GLOBOCAN 2018; http://gco.iarc.fr/
[2] Journal of Hepatology 2018 vol. 69 | 182-236.
*Based on study design, HCC staging criteria, and regional market dynamics.

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Locoregional Therapies (LRT) - A Mainstay Treatment for Unresectable HCC Patients

Multiple Procedures; Limited Long-term Effects

Radiofrequency Ablation: A dominant treatment

- Effectiveness decreases with increasing tumor size
- Local recurrence rates > 50% for lesions > 3 cm

Most other LRTs require:

- Multiple procedures
- Hospitalization
- High treatment costs

Other therapies include:

Microwave Ablation (MWA)

Transarterial Chemoembolization (TACE)

Radiation

[1] Journal of Hepatology 2018 vol. 69 | 182-236.

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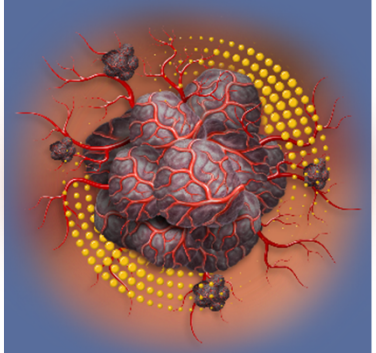
ThermoDox + Radiofrequency Ablation (RFA) Expands the Treatment Zone

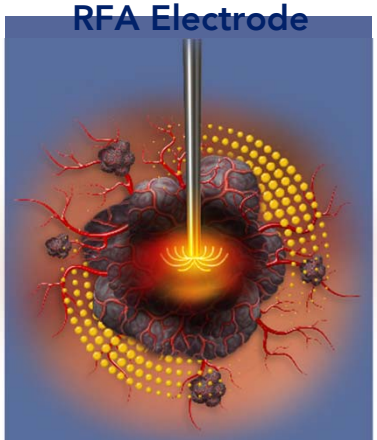
Benefits larger, unresectable tumors

ThermoDox Infused



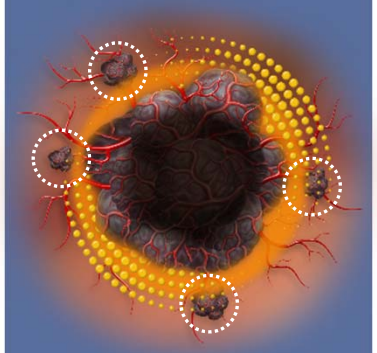
ThermoDox is infused IV ~15 minutes prior to radiofrequency ablation as a single, outpatient procedure

RFA Electrode



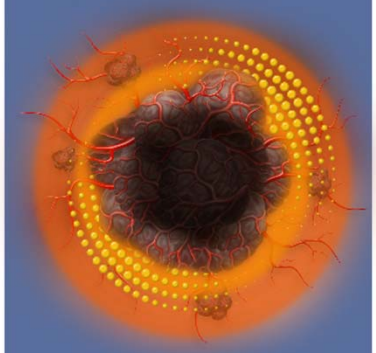
RFA is applied, using high-frequency radio waves to generate high temperature (up to 90°C) through a probe placed directly in the tumor, killing tumor cells in the immediate vicinity of the probe

RFA Ablation Zone



RFA creates a "Thermal Zone" (40°C - 50°C) in the margin surrounding the tumor, where RFA misses micro-metastases outside the ablation zone

Expanded Thermal Zone



Doxorubicin is released in the "Thermal Zone," expanding the treatment and surrounding areas, killing the metastases outside the ablation zone

ThermoDox delivers **25x** more doxorubicin into tumors versus doxorubicin IV infusion alone[1]

[1] Swenson et al. *Plos One*. Oct 2015.

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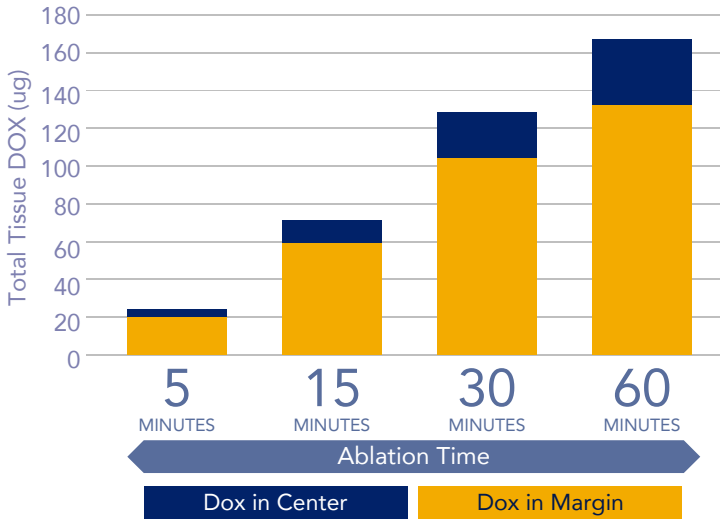
HEAT Study: Results Inform Phase III OPTIMA Study Design

Multivariate Analysis Suggests RFA Dwell Time with ThermoDox was the Key Factor Correlating to Significant Improvement In Overall Survival

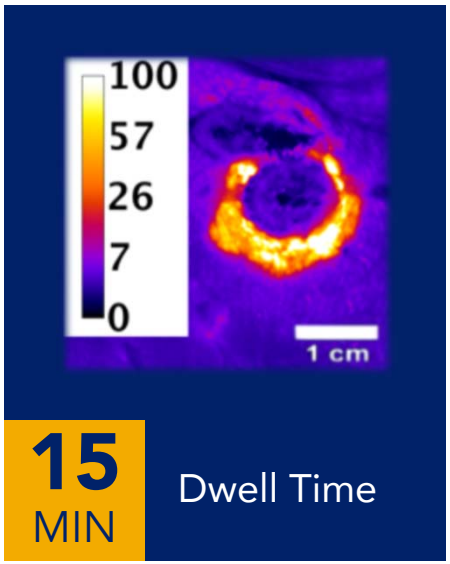
Computational Model

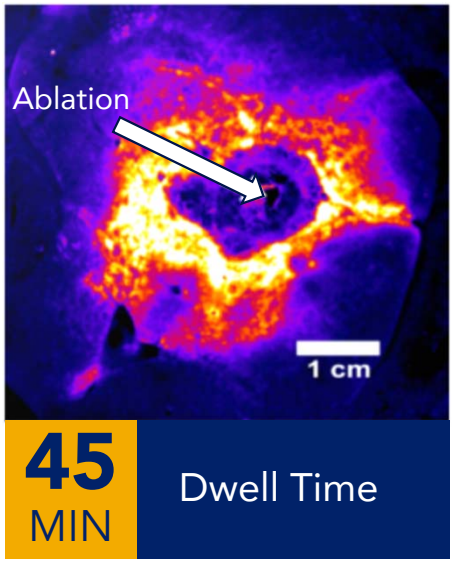
Doxorubicin Concentrations



Porcine Model

More RFA Time = More Local Doxorubicin Deposition



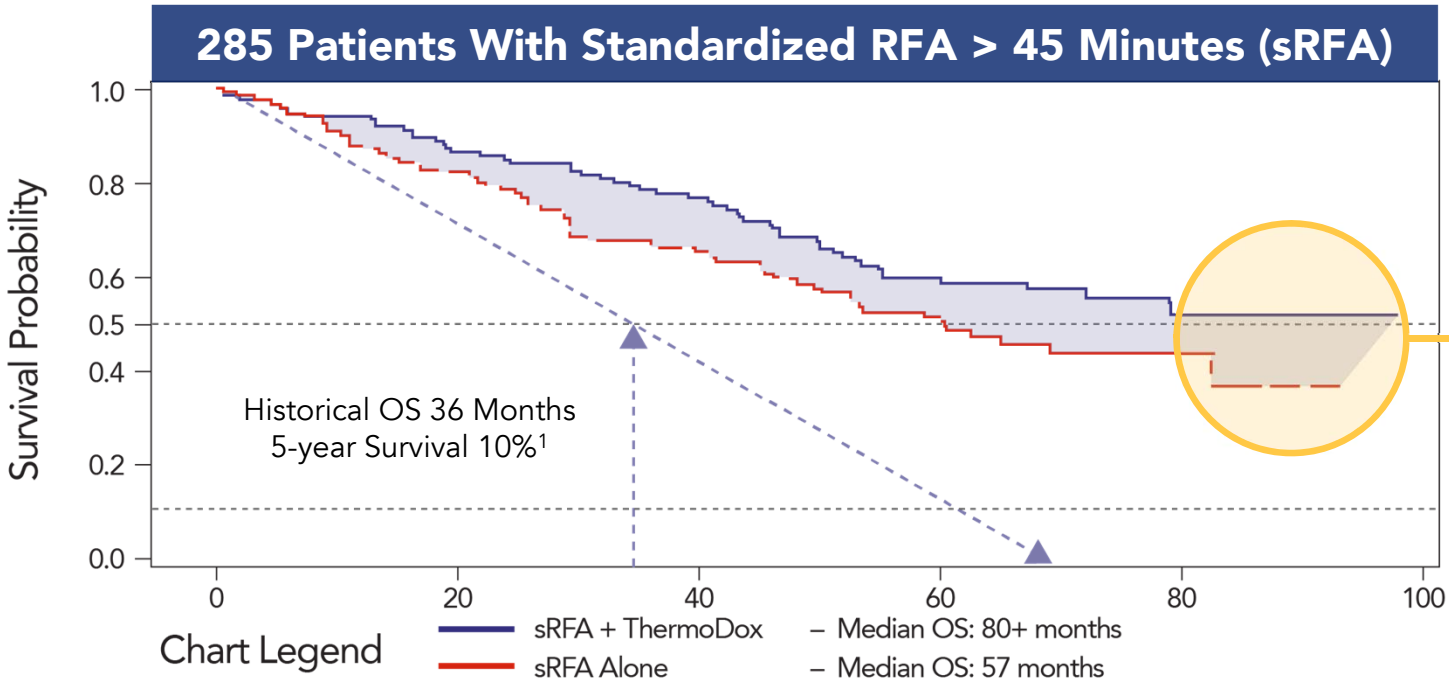


Gasselhuber et al. *Int J Hyperthermia*. 2010
Swenson et al. *Plos One*. Oct 2015.
Tak WY et al. *CCR*. Oct 10, 2017

ThermoDox + RFA Demonstrated a 2-year Improvement in Overall Survival

HEAT Study Subgroup Survival Analysis With Standardized Dwell Time and Number of Lesions

Followed Quarterly for 3 Years



sRFA + ThermoDox

2 YEAR

OS Benefit vs sRFA Alone[1]

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

[1]Tak WY et al. *CCR*. Oct 10, 2017

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Results Presented at Numerous Conferences

Not Celsion's Opinion Alone!

ASCO American Society of Clinical Oncology

ASCO American Society of Clinical Oncology Gastrointestinal Cancers Symposium

AASLD American Association for the Study of Liver Diseases

RSNA

WCIO Advancing Interventional Oncology

ILCA International Liver Cancer Association

EASL European Association for the Study of the Liver

THE KOREAN LIVER CANCER ASSOCIATION

European Conference on Interventional Oncology ECIO

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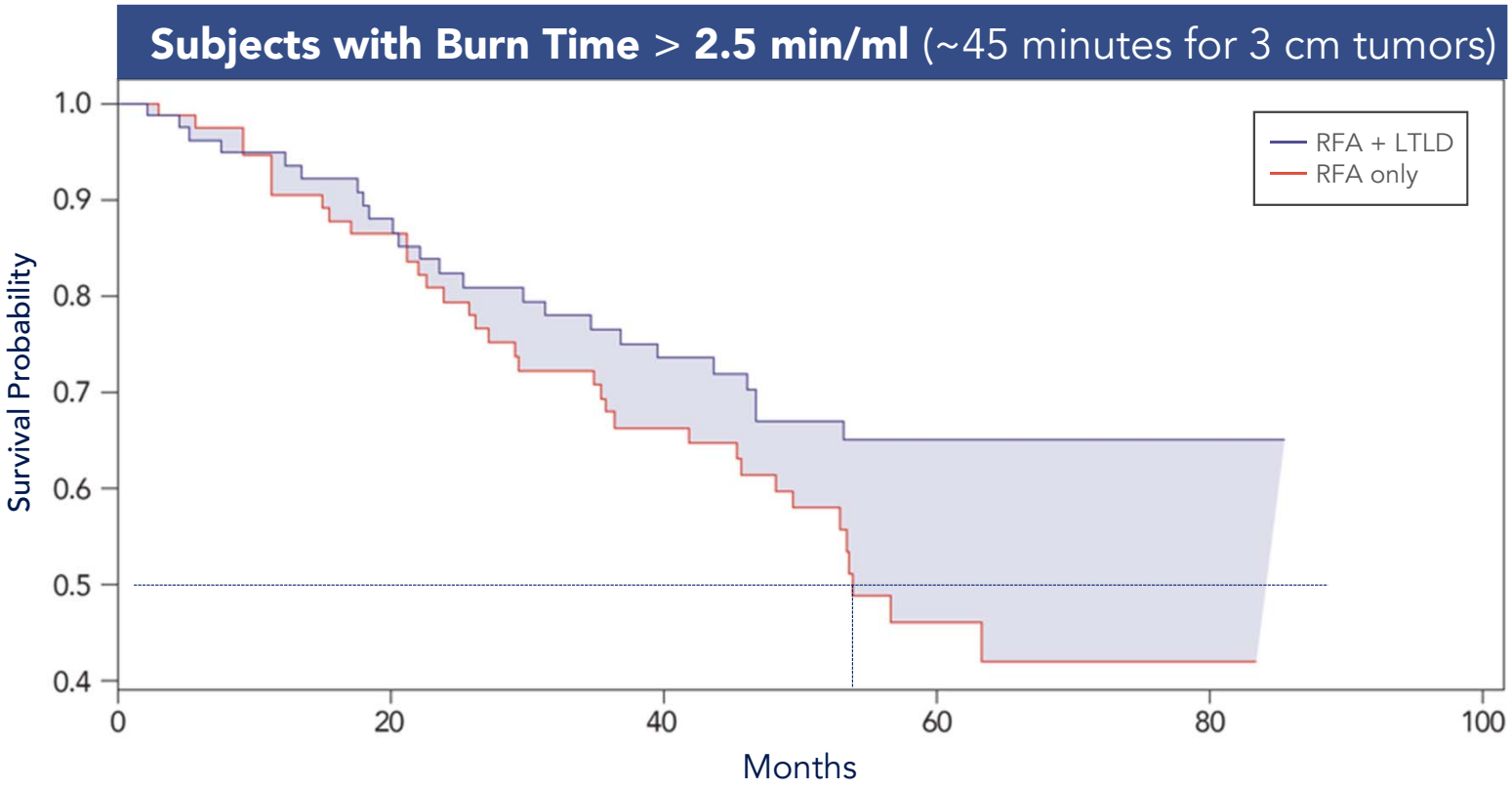
Independent NIH Analysis Confirms the Importance of RFA Dwell Time

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 Correlates Dwell Time and Volume to OS Benefit

Confirmatory Results and Basis of HCC OPTIMA Study Design



Presented at RSNA, 2016

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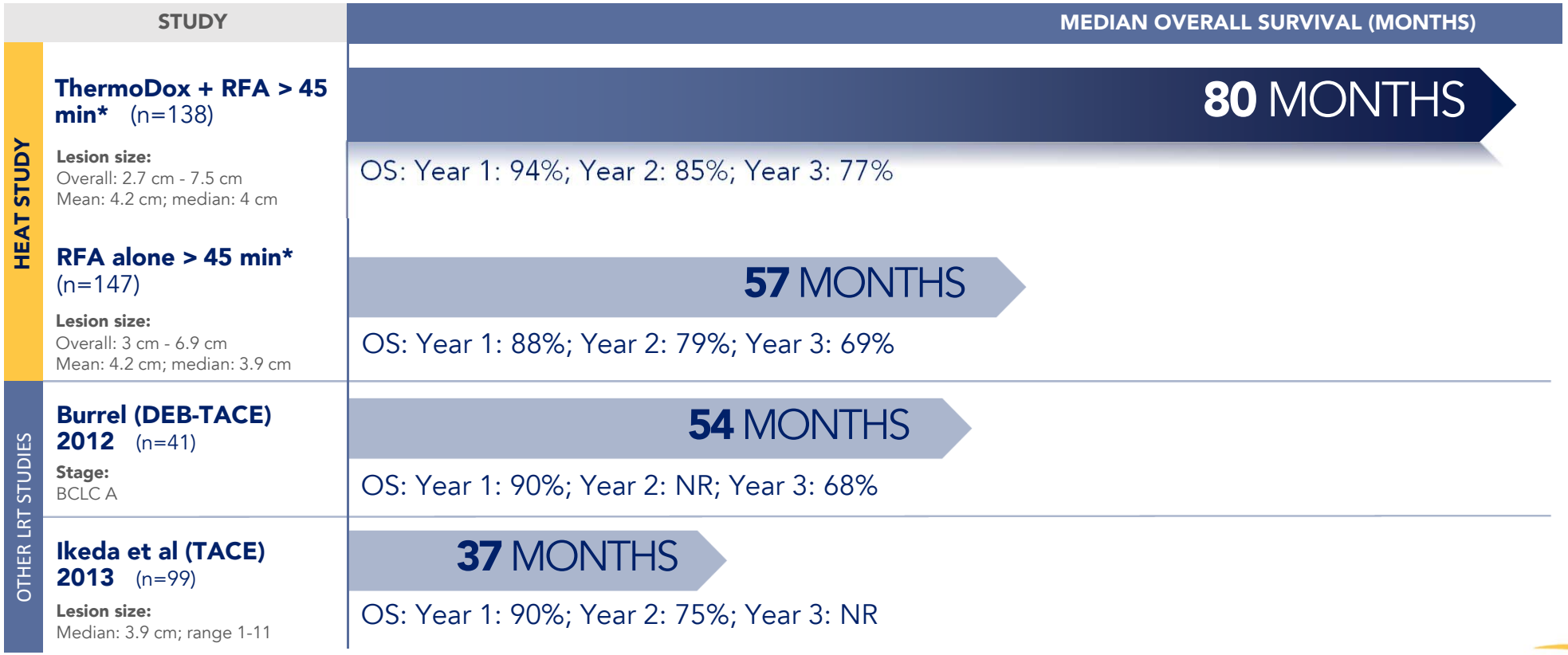
ThermoDox + sRFA Demonstrates Significant OS Benefit versus Other Locoregional Therapies



*Subgroup from HEAT Study.

Phase III OPTIMA Study Design

Applying Broad-based Learnings to OPTIMA Study

Enrollment Completed
Q3 2018

General Eligibility
- Nonresectable 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)

Randomize
1:1

- **N=275** — **ThermoDox® + sRFA***
- **N=275** — **Dummy Infusion + sRFA***

Primary Endpoint
Overall Survival (OS)

Secondary Endpoint
Progression-Free Survival (PFS)

Interim Efficacy Analyses
1st Interim at 118 deaths HR < 0.61

2nd Interim at 158 deaths HR < 0.70

Final Analysis
197 OS deaths HR < 0.75

~65 Clinical Sites in **14 Countries**

*Standardized radiofrequency ablation > 45 minutes.

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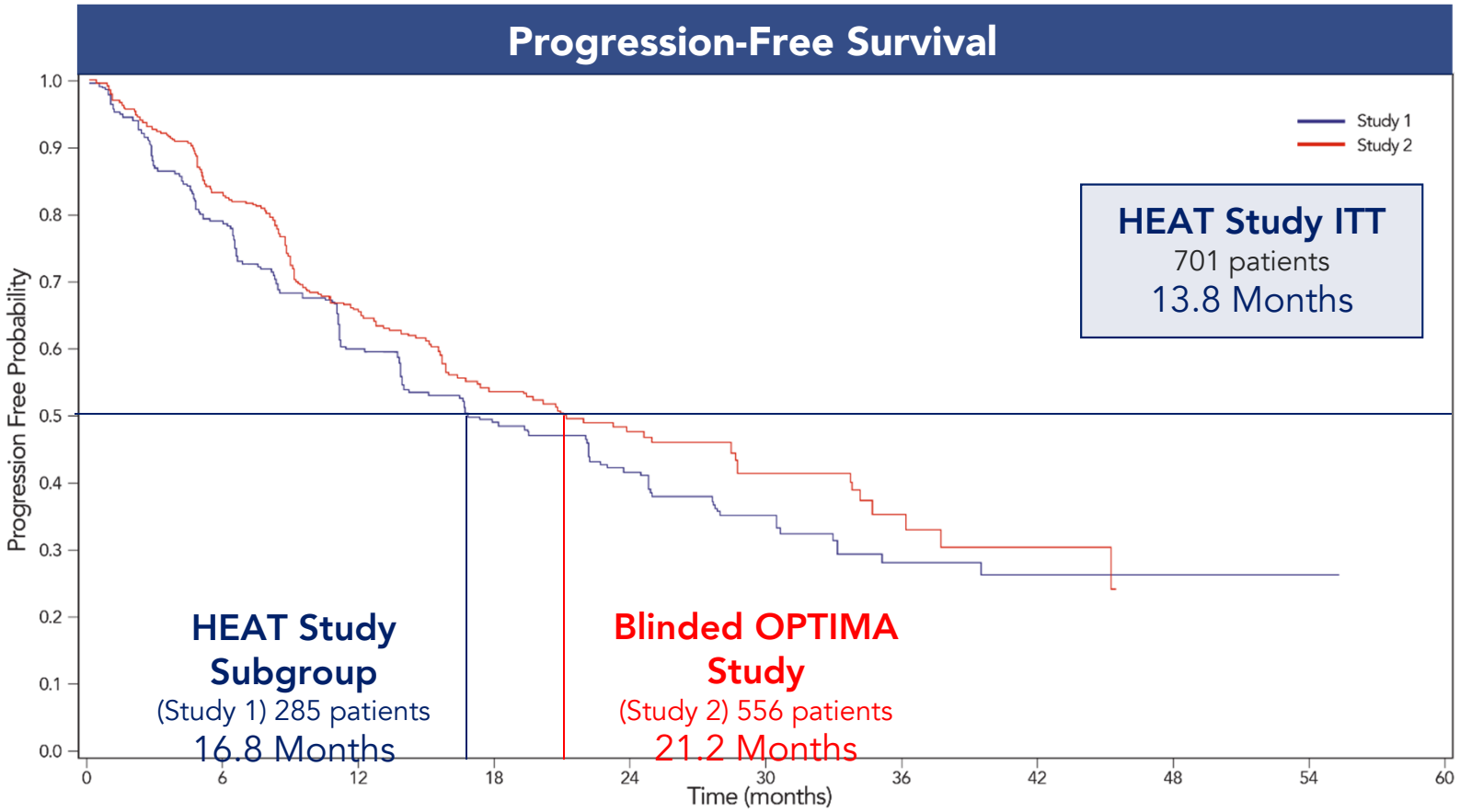
OPTIMA Study: Blinded PFS Data Consolidated for Both Arms

PFS and OS Tracking with Results of HEAT Study Subgroup



ThermoDox Summary

OPTIMA Study addresses the largest global unmet medical need remaining in oncology HCC Cancer: $ Billion+ Commercial Opportunity

Published HEAT Study subgroup analysis demonstrates ability to deliver clinically meaningful results for early-stage and intermediate-stage HCC patients

Addressable patient population offers a "Blockbuster" market opportunity

PFS and OS Data is on track with expectations

First look at interim data: 2nd half of 2019

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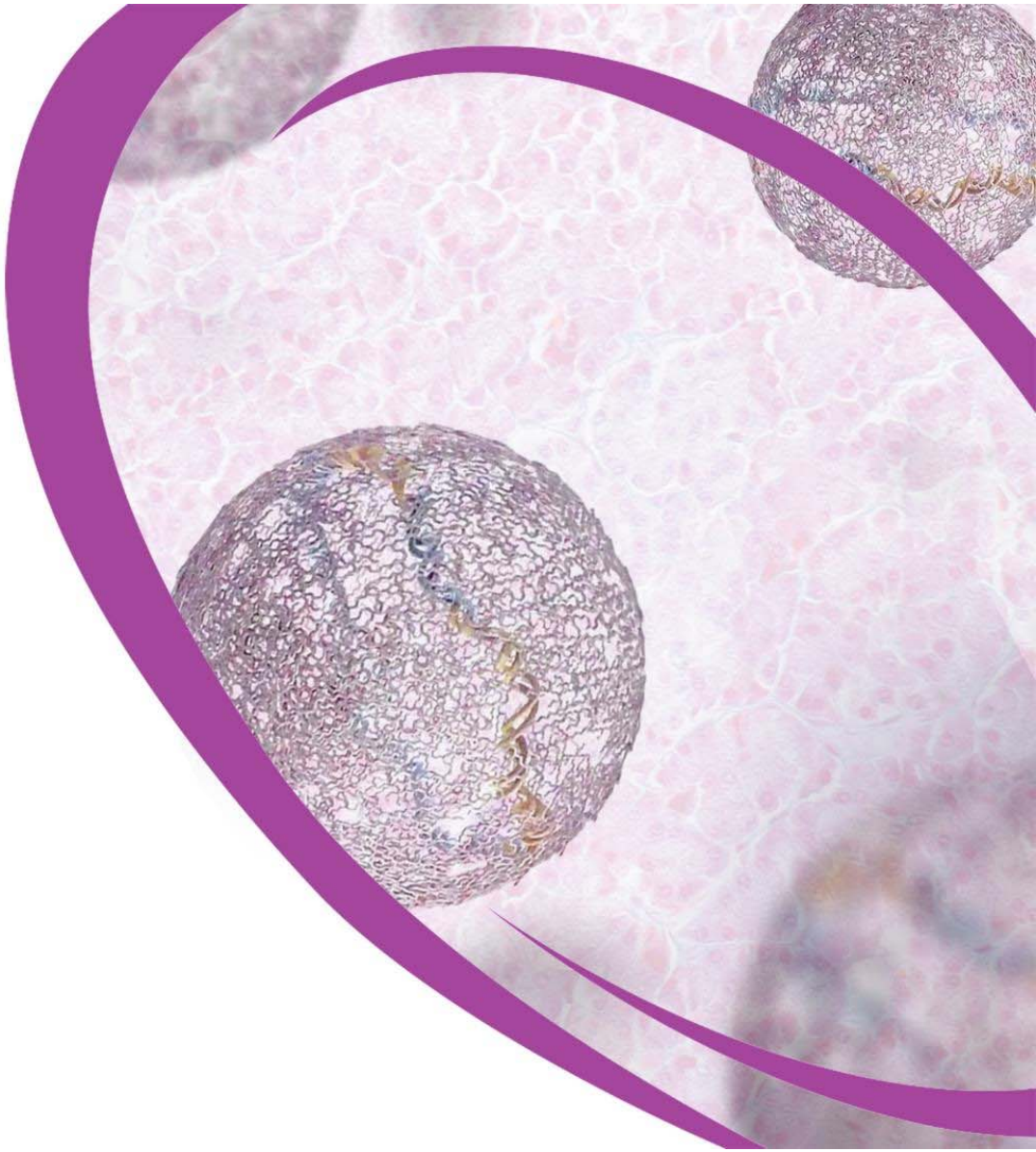
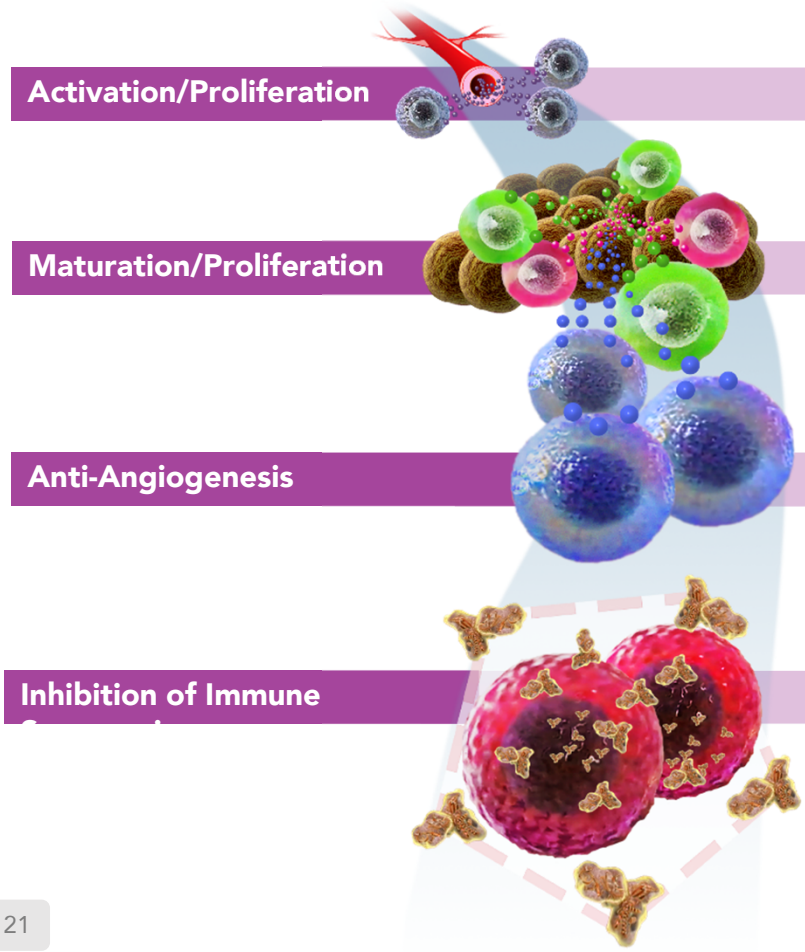
GEN-1 IL-12

IMMUNO-ONCOLOGY PROGRAM



IL-12: A Powerful Immune-Modulating Agent

Interleukin 12 Can Induce Anti-cancer Immunity Through Multiple Mechanisms



1 Stimulates the proliferation of CD-8 positive T-cells and natural killer (NK) cells and their cytotoxic activity against the tumor

2 Shifts the differentiation of naive CD-4 positive T-cells toward a TH-1 phenotype, further enhancing the immune response – Turns "cold" tumors into "hot" tumors

3 Promotes cellular production of the potent immune mediator IFN-γ and TNF-α. IFN-γ promotes the expression of anti-angiogenic molecules, halting the growth of new blood vessels that supply oxygen to the tumor

4 IL-12 may inhibit regulatory T-cells that suppress immune responses by "hiding" the tumor from the body's immune system

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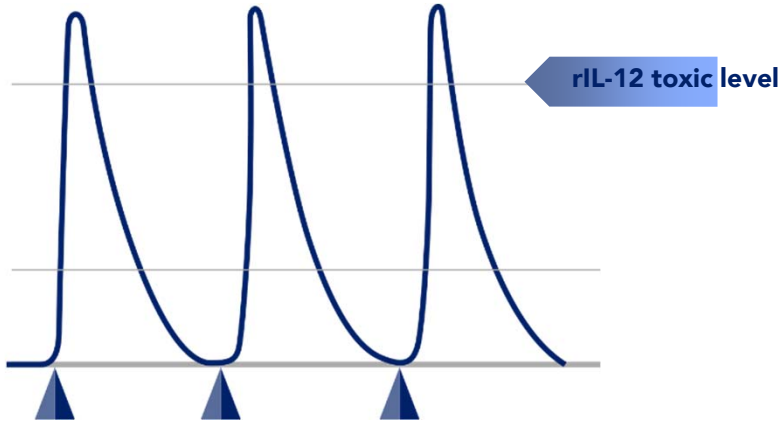
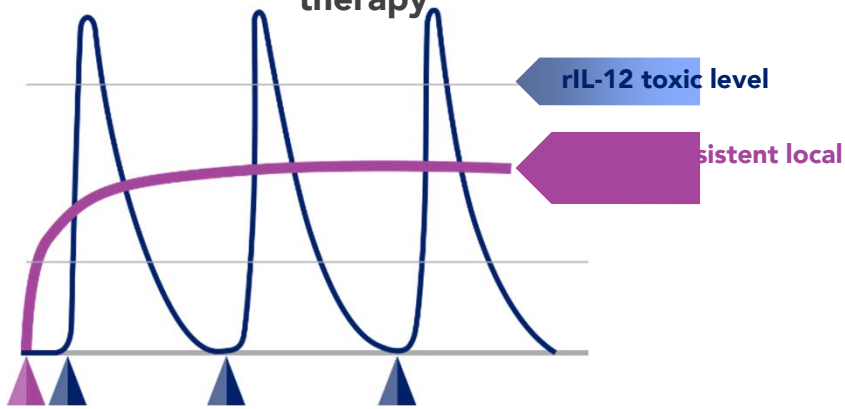
GEN-1 Addresses IL-12 Toxicity and Poor Pharmacokinetics (pK)

First-in-class IL-12 Novel Delivery

Poor Kinetics of rIL-12 Requires Frequent, High, and Toxic Doses



Novel Polymer-Plasmid DNA Transfection Nanoparticle of GEN-1 provides persistent local therapy



Locoregional production avoids toxicities and poor pK associated with systemic recombinant protein IL-12 (rIL-12)

Persistent local delivery lasts up to 1 week, with ability for repeat dosing

Potential for long-term maintenance therapy

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GEN-1 Composition

Three Components of Polyethylene Glycol (PEG) Polyethyleneimine (PEI) Cholesterol Delivery System

PEI Condenses DNA strands into nanoparticles

PEG
Improves stability and protects plasmid from degradation

Cholesterol
Facilitates uptake and trafficking across cell membranes

IL-12 plasmid vector

CMV

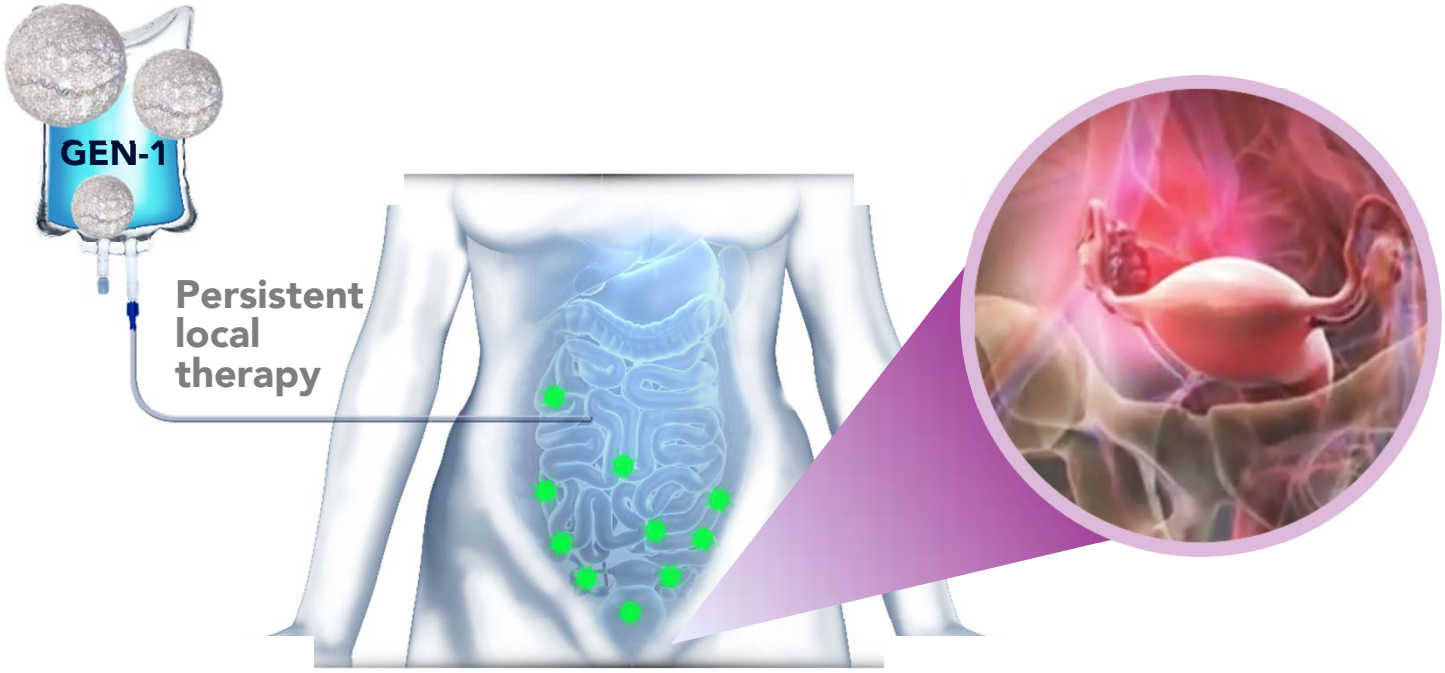
CMV

IL-12 plasmid vector carries IL-12 gene and elements for gene expression

GEN-1
Nanoparticles ~150 nm

With intraperitoneal delivery, transfected cells are able to produce sustained concentrations of IL-12 protein in the vicinity of the tumor

GEN-1 Targets Ovarian Cancer Metastases Throughout the Peritoneal Cavity



Local Expression of IL-12 Favors Immune Modulation in Tumor Microenvironment

Intracavity infusion of GEN-1 produces durable and local expression of IL-12 in the peritoneum

Peritoneal-plasma barrier minimizes systemic exposure of IL-12, thereby improving safety profile of GEN-1

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First Target: Ovarian Cancer

High Global Incidence and Mortality

8th Most Diagnosed Cancer Among Women

225,000 annual incidence worldwide

22,280 in US 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%**
- **> 70% of women are diagnosed in advanced stages (III/IV)**
- **Only 15%** diagnosed with localized cancer eligible for potentially curative surgery
- Survival rate dramatically reduced if not localized cancer
- Most common site of recurrence is in the abdomen
- Intraperitoneal-administered therapy is an important clinical strategy

Addressable Market Opportunity

> 100,000 Patients

Sources: Cancer Statistics, American Cancer Society; Globocan; SEER database.

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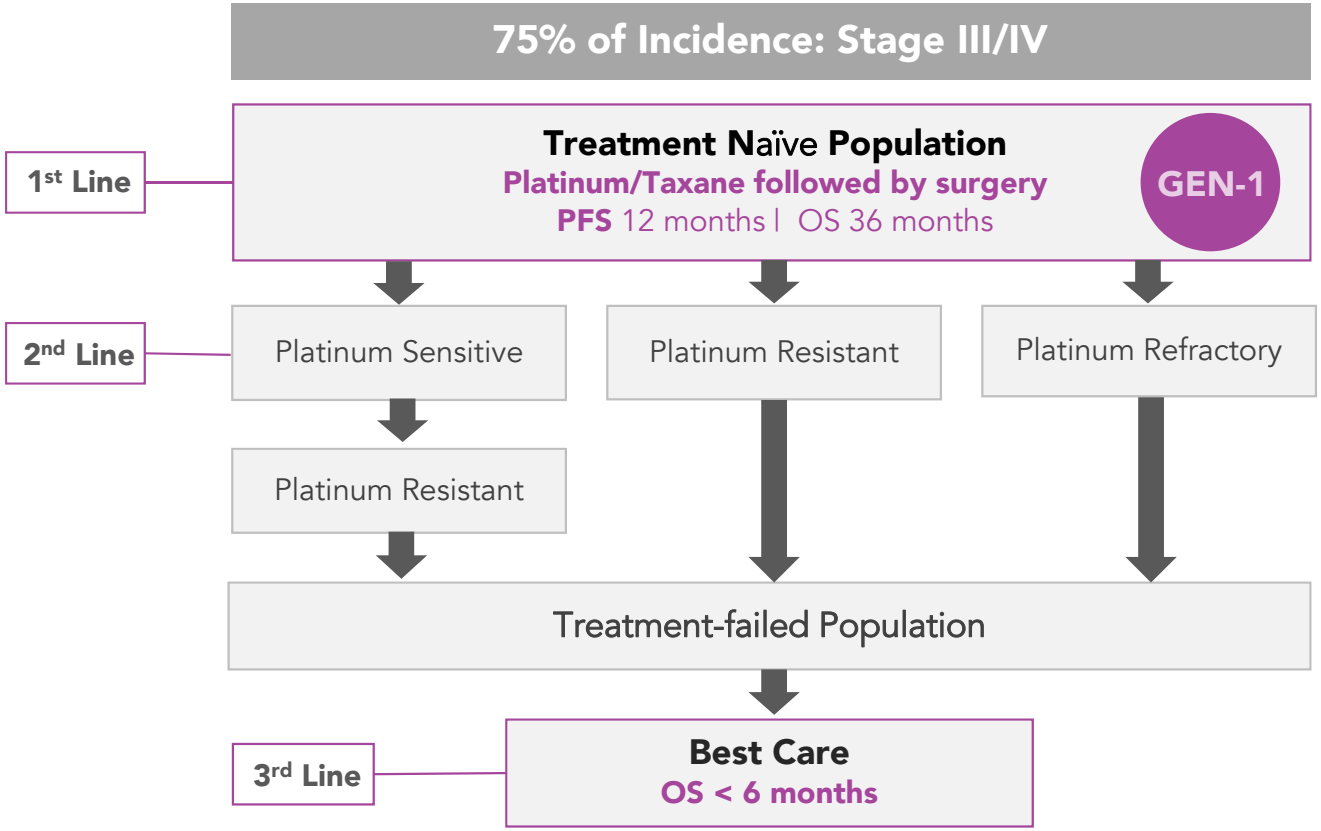
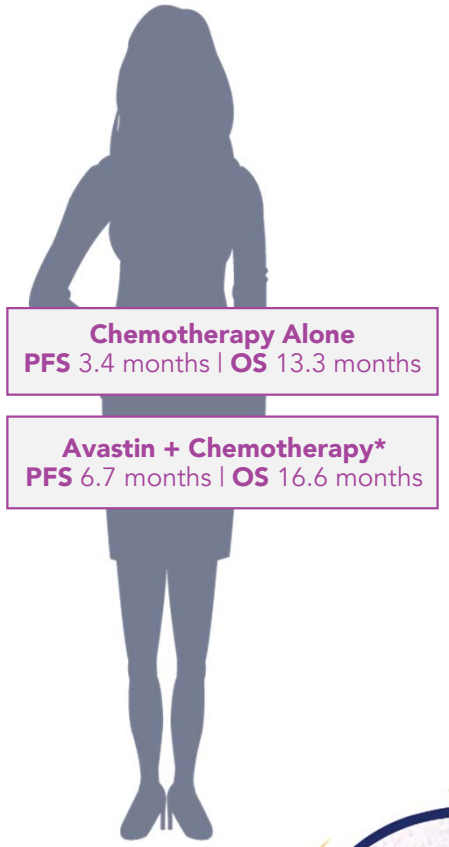
Treatment Options in Advanced Ovarian Cancer Are Limited

Recurrence Rates are High and Survival Rates Low





Chemotherapy Alone
PFS 3.4 months | **OS** 13.3 months

Avastin + Chemotherapy*
PFS 6.7 months | **OS** 16.6 months

*Aurelia Trial.

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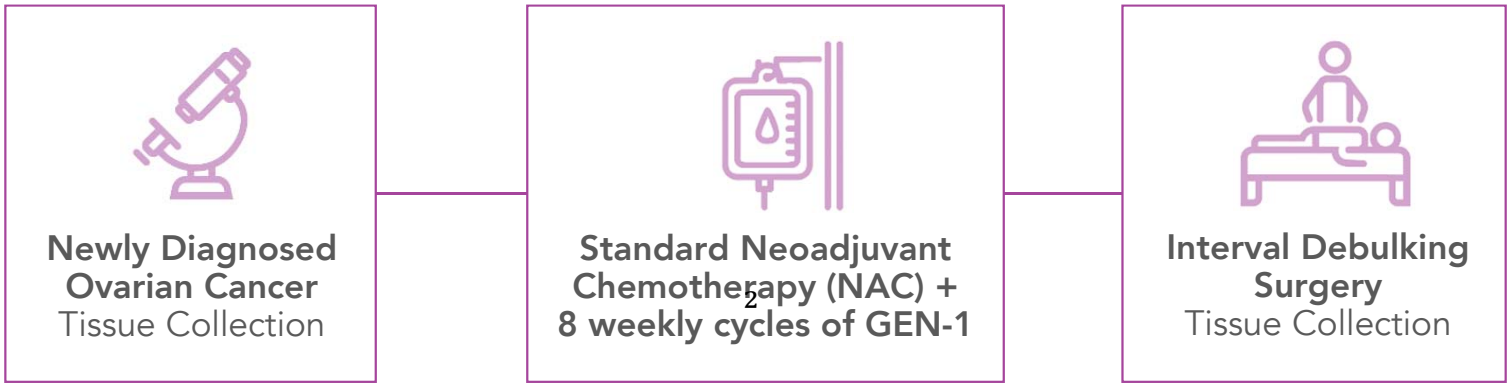
OVATION I Ovarian Cancer Study

Phase I to Determine Dose, Efficacy, and Biological Activity With NAC in Stage III/IV Patients



Ovarian Cancer Patients
(FIGO IIIC & IV)
3 + 3 Dose Escalation
Starting at 36 mg/m²

Final Dose at 79 mg/m²
6 patients

Primary Endpoint

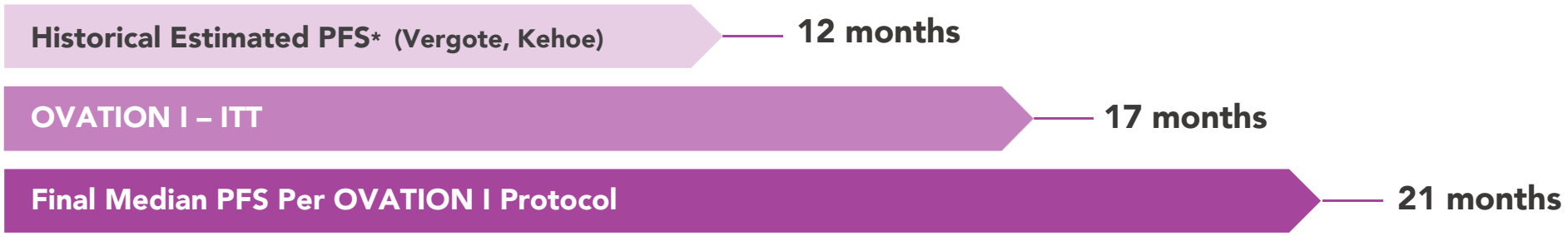
Safety
Optimal Dose

Secondary Endpoints

Clinical Response, PFS
Pathological Response,
Surgical Response,
Biological Response

OVATION I Study: Improved Progression-Free Survival with GEN-1

Improvements vs Historic Outcomes in Comparable Patient Populations



Similar Baseline Patient Characteristics in the OVATION I Study vs Large NAC Trials

Name of Study	# of Patients	Age	Histology	Stage
OVATION I	**18**	**Median: 63** **Range: 48-79**	**Serous: 95%** **Clear Cell: 5%**	**IIIC: 67%** **IV: 33%**
Vergote	670	Median: 63 Range: 33-81	Serous: 65% Undiff: 27%	IIIC: 76% IV: 24%
Kehoe	550	Median: 65 Range: 34-88	Serous*: 83% Clear Cell: 6%	IIC, IIIA/B: 12% IIIC: 71% IV: 15%

*Includes high-grade and "not specified"

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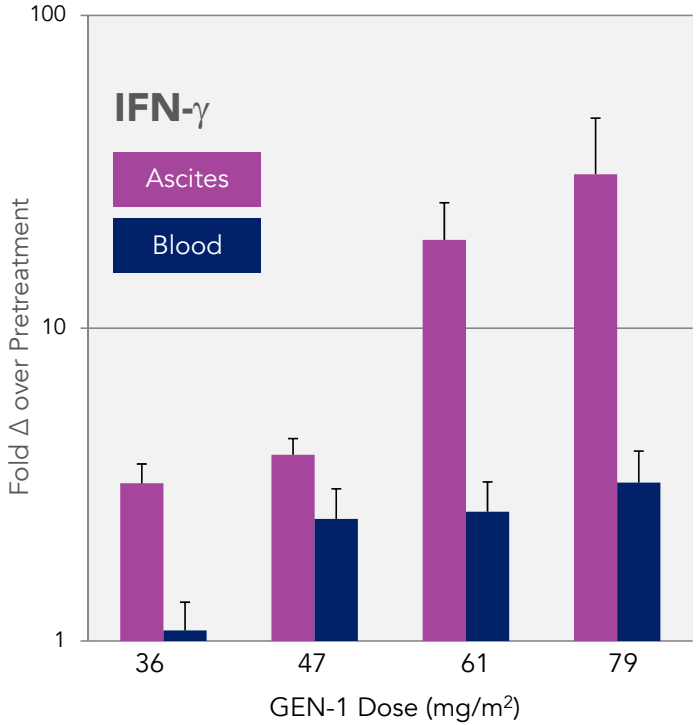
OVATION I Study

Clinical and Molecular Dose Responses Demonstrated

Clinical Responses*

	GEN-1	
	Low-Dose Cohorts 36 mg & 47 mg	**High-Dose Cohorts 61 mg & 79 mg**
Objective Tumor Response (CR/PR) RECIST 1.1	60%	**100%**
Interval Debulking Status R0 Resection Rate	40%	**88%**

Interferon-γ Expression in Ascites & Blood



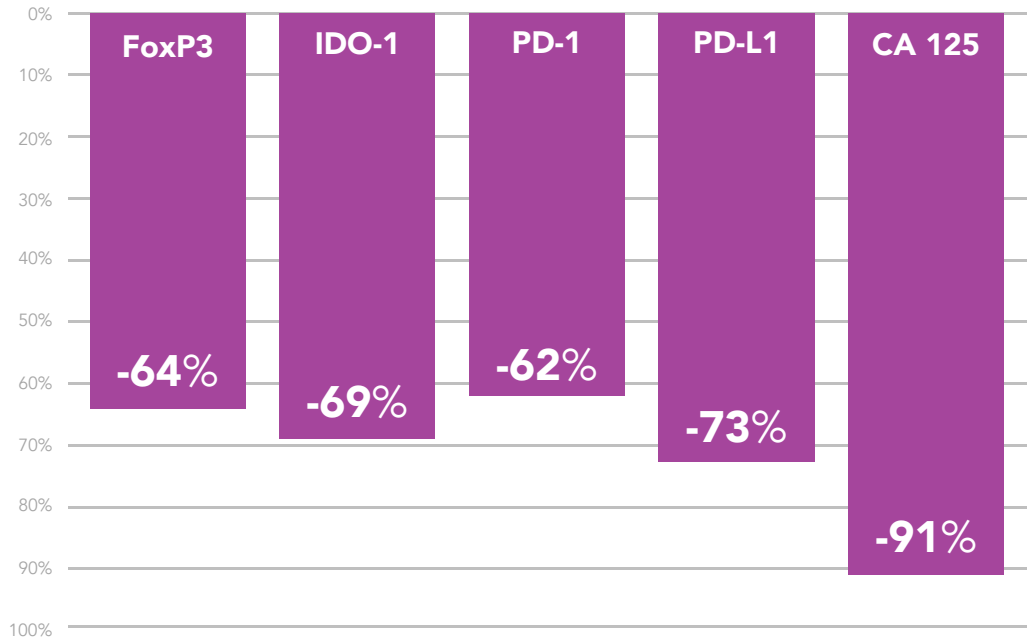
*Chemotherapy dose consistent across all GEN-1 dosing cohorts

OVATION I Study

Pro-immune Changes in Tumor Microenvironment

Key Immunosuppressive Biomarkers in Ovarian Cancer Significantly Inhibited

(Post- vs Pre-Treatment)



Density of immune biomarkers measured in tissue sections via immunocytochemical staining

Final CA125 measured in blood upon enrollment and at 5th GEN-1 treatment

Decrease in FOXP3 and IDO-1 not observed in previous NAC studies

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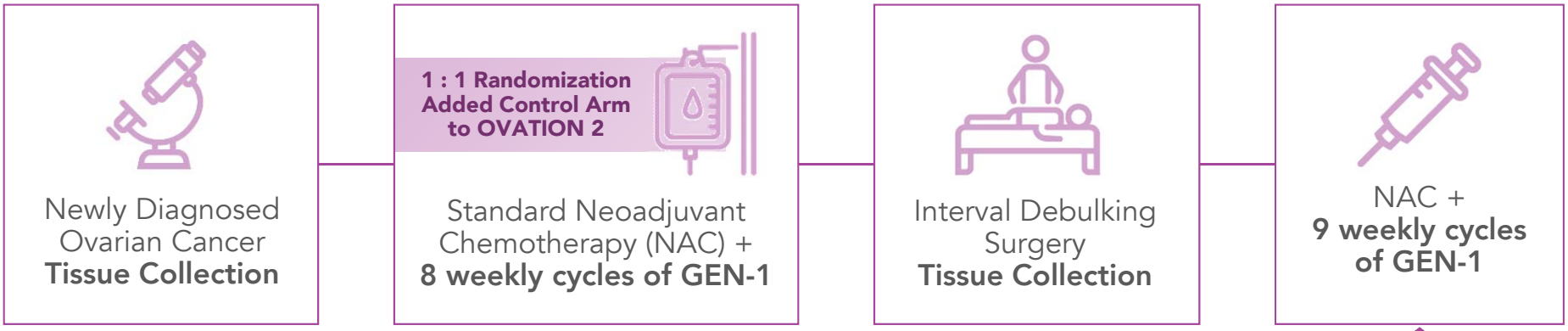
GEN-1 OVATION 2 Ovarian Cancer Study

To Determine Efficacy and Biological Activity With NAC in Stage III/IV Patients



Ovarian Cancer Patients
(FIGO IIIC & IV)
Up to 130 patients
12 patients in Phase I Run-in (100 mg/m²);
Up to 118 patients in Phase II

Randomized 1:1
NAC +/- GEN-1

Primary Endpoint

Progression Free Survival

Secondary Endpoints

Clinical Response, Pathological Response, Surgical Response, Safety, Biological

Additional Treatment Regimen vs. OVATION I Trial Design

Continue GEN-1 treatment following surgery (Maintenance Therapy)

GEN-1 Summary

GEN-1 offers a novel way to harness the powerful immunological properties of IL-12;
The "Master Switch" to the body's immune system

Five completed ovarian cancer trials demonstrate biologic and clinical activity;
Strong efficacy signals in Phase I; Mechanism of action confirmed

OVATION 2 offers new hope to a large segment of newly diagnosed advanced ovarian cancer patient population

Completion of first phase of OVATION 2 on track for the 2nd half of 2019

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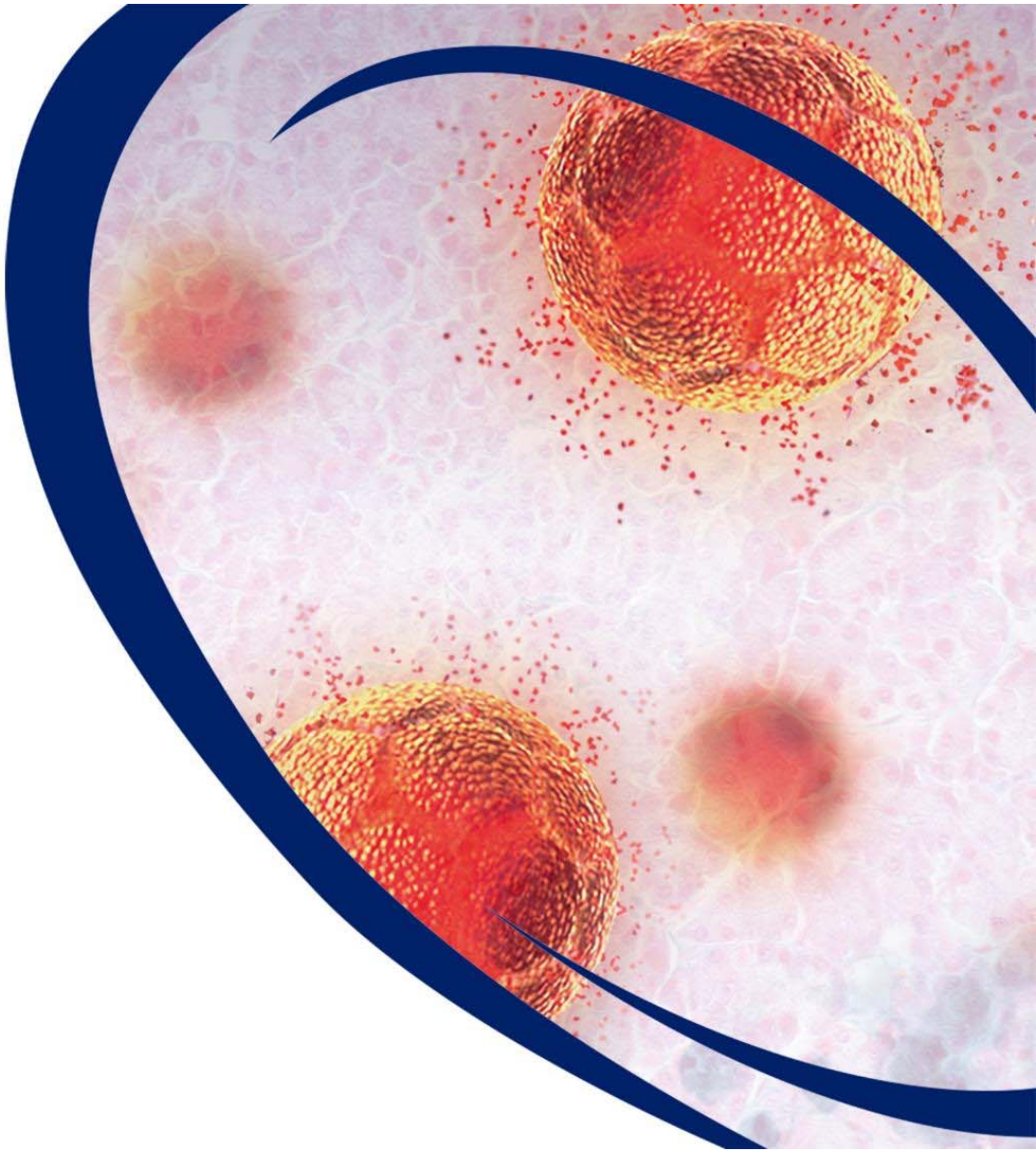
Financials



Financial Overview

Cash & Investments at 12/31/2018	$27.7 million
+ Projected NOL sales in 2019	3.0 million
Total Cash & Investments	$30.7 million
Estimated cash usage per month	$1.5 million
Market Capitalization	~$45 million

Common shares outstanding at 12/31/2018	18.7 million
+ Stock Options	3.2 million
+ Warrants	0.6 million
Fully diluted shares outstanding	**22.5 million**
Avg Daily Trading Volume	~150,000

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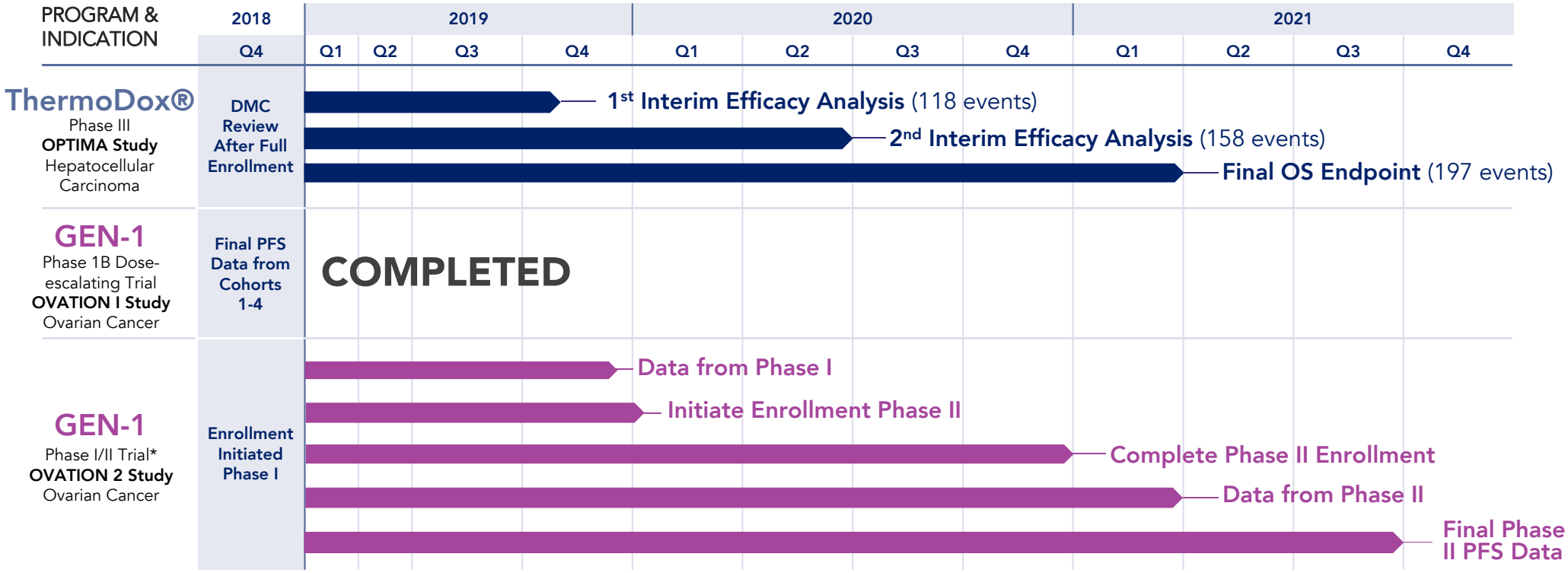
Advanced Stage Clinical Development Programs

Milestone Events 2019-2021



*Open-label design will allow for periodic reporting of results.

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