



Encapsulate^{Inc.}
Cancer Solutions

Investor Deck

Q2 2025

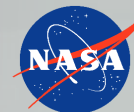
info@encapsulate.bio

Precision Diagnostics for Personalized Cancer Therapy

Transformative automated biochips that envisage
the clinical response of cancer patients



Memorial Sloan Kettering
Cancer Center



Hartford
HealthCare



UCONN
HEALTH

Encapsulate Inc

Encapsulate provides fully automated tumoroid-on-a-chip systems that measure the clinical response profile of cancer patients on a personalized level.

We screen microtumors derived from patient biopsies against existing clinical treatment regimens and generate personalized insights to guide treatments in under 7 days.

Funded by



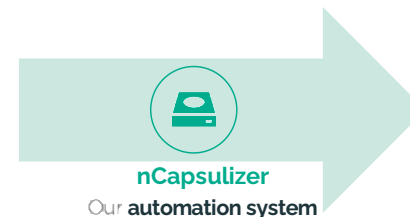
Clinical Collaborators



Alumni of



The **biochip** grows patients' cancer cells as **microtumors** outside the body.



nVision

The **report** provides analytical insights **to oncologists** on patients' response to potential treatments.

Regulatory

A fee-for-service **Lab Diagnostic Test (LDT)**, in partnership with regional cancer center **CLIA** labs. A comprehensive consultation report that provides recommendations on:

- Effective treatment(s)
- Drug elimination
- Minimal effective dose
- Resistance development

Proteomics Metabolomics



Direct Toxicity Mutations



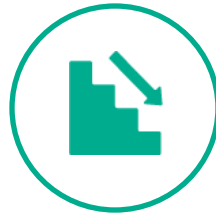
The conventional process of decision-making has **deficiencies**

Majority of chemotherapy cycles are both ineffective and toxic.



Ineffective chemotherapy rounds

On average ~6 rounds, 15 months, and \$150K-500K in costs^{1,2}



Progressively lower chances for treatment

drug resistance↑
metastasis↑
cancer progression↑^{3,4}



Unsuccessful treatment costs are unbearable

147% more emergencies, 75% more re-hospitalization, and 3X costs⁵.



25% fatality rate due to chemotherapy toxicity

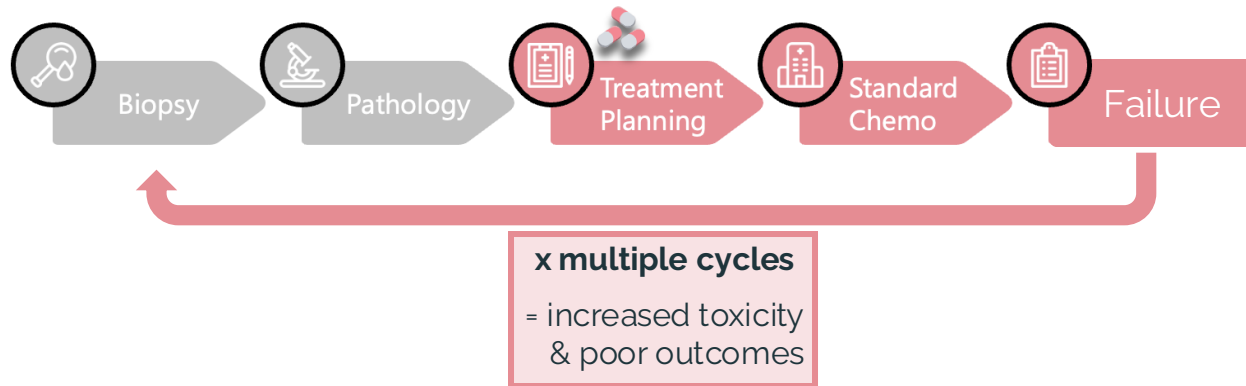
Only due to side effects of chemotherapy⁶.

¹ Lancet Oncol. 20.6 (2019): 769-780.
² Cancer Research UK, <https://shorturl.at/wzGKV>
³ Cancer Res 79.18 (2019): 4567-4576.
⁴ Adv Pharm Bull. 73 (2017): 339-348.
⁵ Emergency Cancer Care, 1.1 (2022): 4.
⁶ UK National Confidential Enquiry into Patient Outcome and Death



Multiple cycles = increased mortality, poor outcomes.

Treatment planning is an **iterative, trial and error**, and **sequential** process

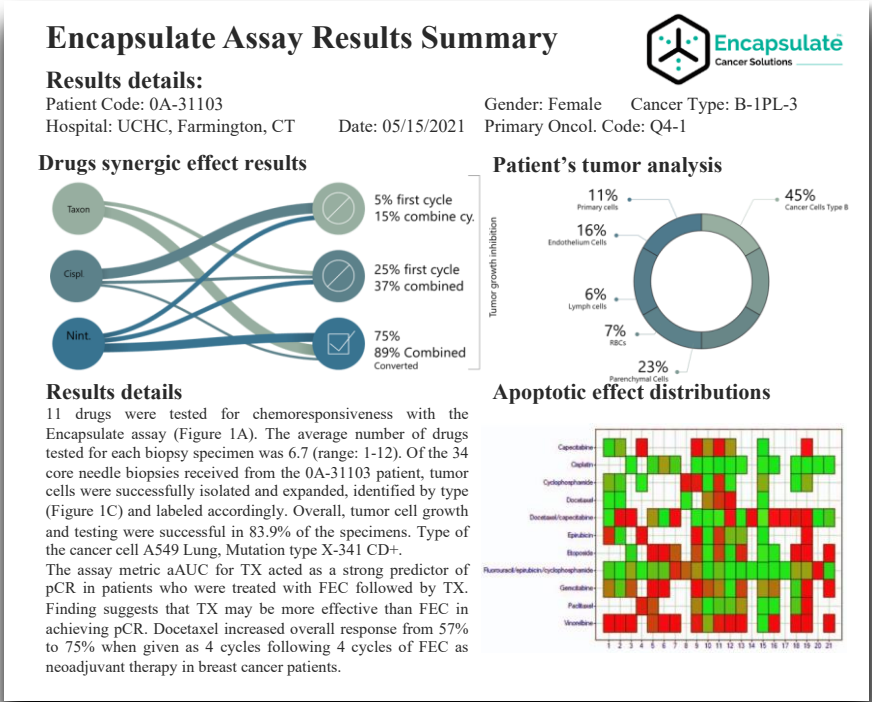
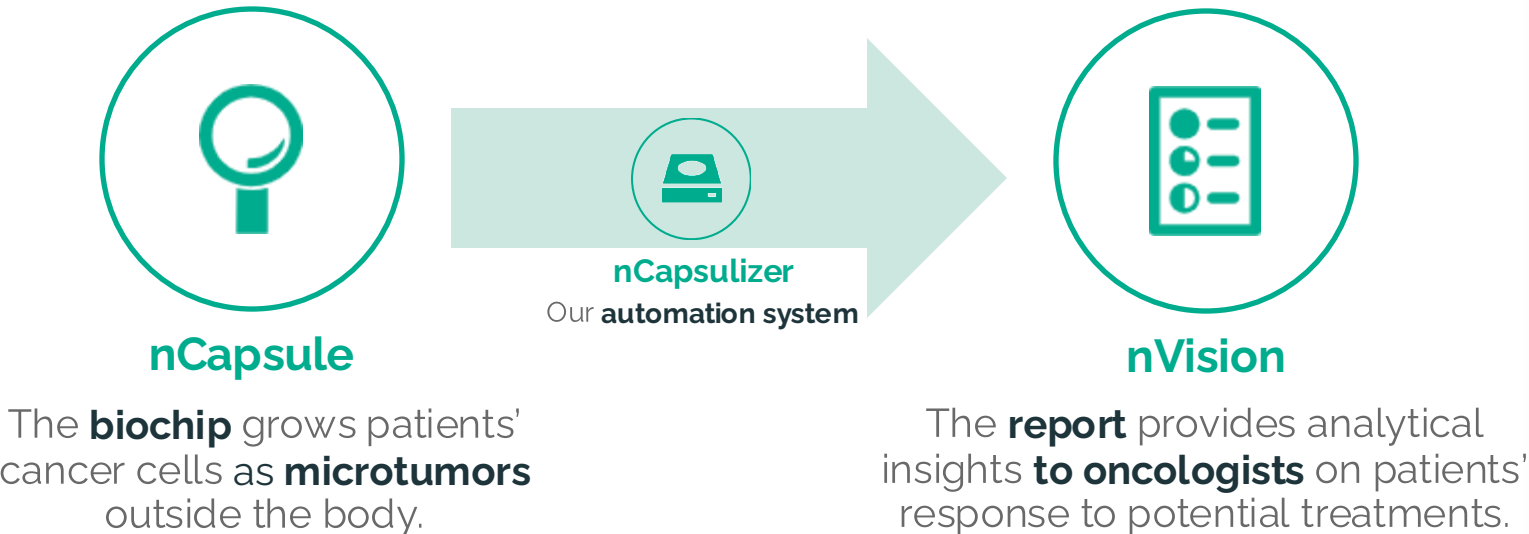


A **functional assay** can screen out ineffective treatments

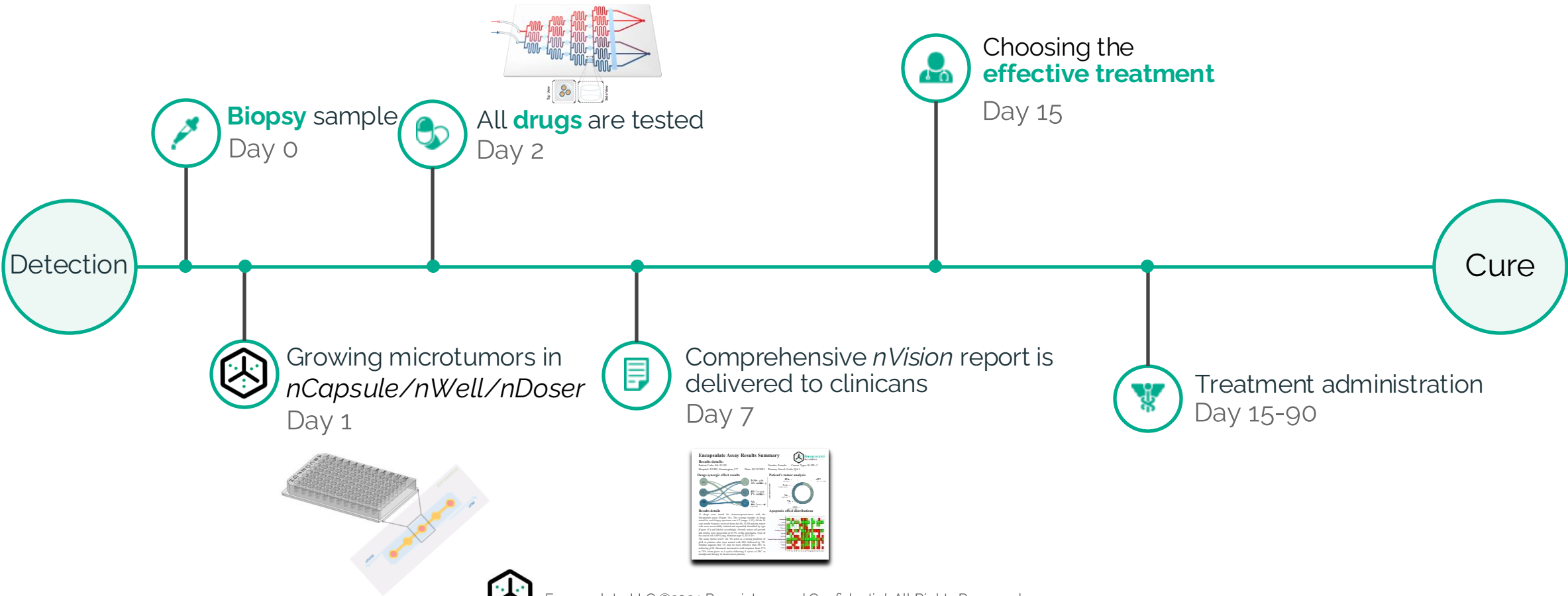


Solution: Encapsulate

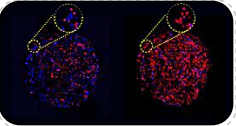

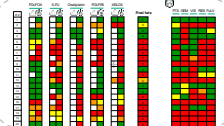
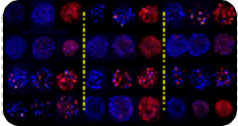
We create **therapeutic response profiles** of patients for oncologists to administer life-saving treatments



A **consultation Lab Diagnostic Test** to save lives



Efficient **tumor** replication: Automated, Rapid, Precise, Affordable

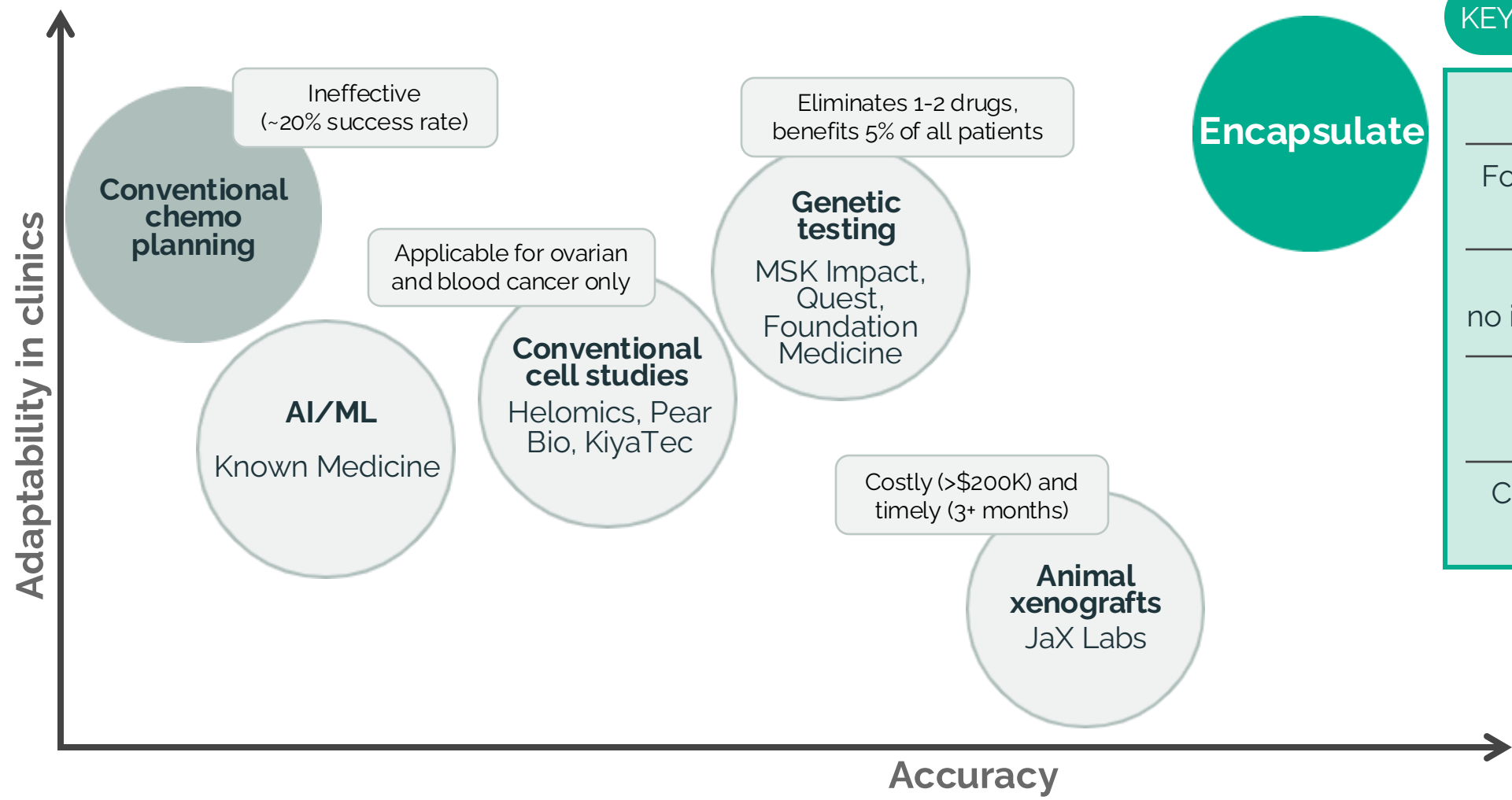
Automated	Rapid	Precise			Affordable	Scalable
		Lab-verified	Clinically tested	Assays		
Proprietary automation technology	Compatible with any needle biopsy	Breast, ovarian, cervical, lung, lymph, bone	Colorectal and Pancreatic	A miniature microcopy of patient tumor	<\$20 per biochip	Rolling-based biochip fabrication
Pre-defined, consistent tumoroid size and shape	Specimen processing in 1 hour	Quantified readouts with statistical analysis	Can test any single or combination chemotherapy	Comprising cancerous and spatial cells	<\$1000 (landed) per patient	Automated cell growth
Maximizes insights, reduces biases, and lowers costs	Tumoroids ready in 2 hours		Models tumor resistance and invasion	Metabolomics and proteomics	Estimated sales price: \$4500 (40% below industry average)	Automated data collection and analysis
Integrates tumor-on-a-chip, spheroids, microfluidics, bioreactors, and automation technologies	Data collected within 5 days	+	200 identical microtumors per needle biopsy	RNA and DNA sequencing	+	No clean-room requirements
	+	+		Pre- and post-treatment mutations	+	
	+	+	+	Cytotoxicity testing	+	+



Encapsulate's technology is **complementary** to existing cancer diagnostic tools.

Competition

We deliver compelling business advantages over alternatives



KEY DIFFERENTIATION FACTORS

- Functional test**
For **all chemotherapy-eligible** patients
- Shorter turnaround time**, no impact on length of treatment
- Can recommend potential effective **combinations**
- Can **integrate** genetic testing and AI/ML



Clinical validation achieved on 60 patients (colorectal and pancreatic)

Clinical Study

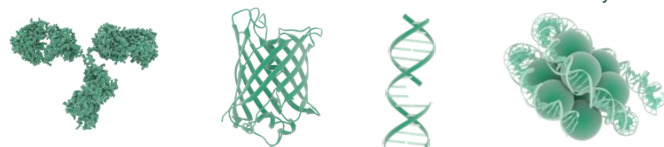
- Study Period: **2022-2024**
- Focus: **Retrospective** clinical studies on **colorectal** and **pancreatic** cases.

Key Findings

- **94 out of 98** RECIST outcome predictions precisely matched clinical outcomes.
- **100% accuracy** in survival predictions.
- **100% success** in tumoroid formation for all patients.

Assays

Proteomics Metabolomics Mutations Toxicity



Validation of Testing Accuracy

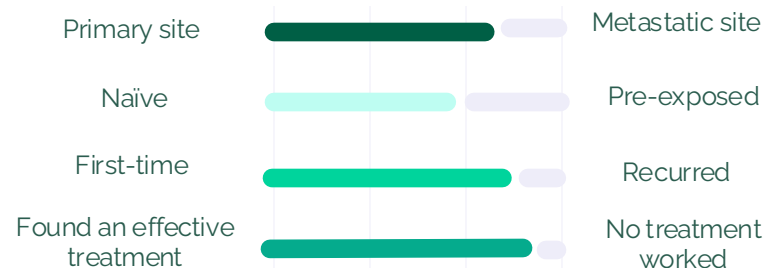
- Effective treatments
- Combination treatments
- Minimal effective dose
- Resistance development

Successfully Tested

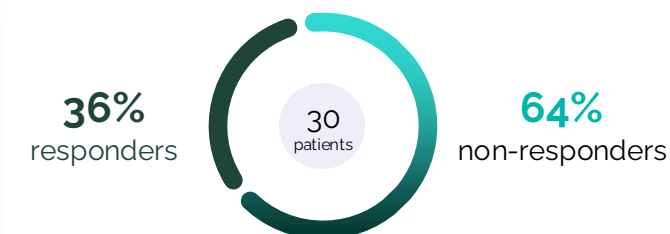
60 samples across different conditions, stages, and tumor locations.



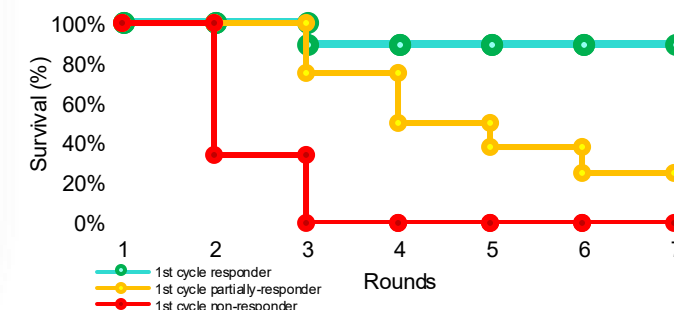
Patients with tumors at stage II, III, and IV - naïve or pre-exposed to chemo/radiation - and resected from primary tumor locations or secondary sites (abdomen, lung, ovary, liver) have been successfully tested and were accurately predicted.



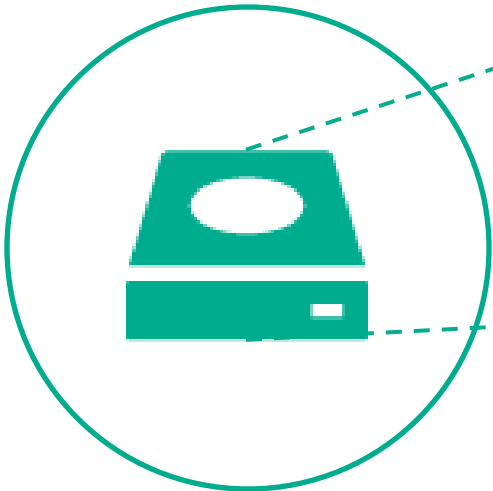
Response rate in clinical samples



Accuracy of clinical predictions



Transforming Research, Defying Gravity, and Reaching New Heights



nCapsulizer

The **automation system** processes the biochips while **creating a human body-like environment**



THE WALL STREET JOURNAL.

HEALTH

How Research in Space Helps Doctors Treat People on Earth

Removing gravity allows researchers to do experiments they could never duplicate on the ground

By [Brian Gormley](#) [Follow](#)

Sept. 22, 2023 at 12:00 pm ET



Opportunities for Clinical Partnerships

Knowledge Exchange

Publications

Collaborative research & case studies

Voice of Customer

Product/market fit strategy
consultation

Advisory Role

Join Encapsulate's SAB

Collaborative

Clinical Study Site

Collaboration on prospective studies

Co-development

Joint technology development

Grant Applications

Joint funding proposals

Implementation

Operational Pilot. PH1

Deploy test in clinic

Clinical Trials

Add Encapsulate's test into existing
clinical trials for pharma

Investment

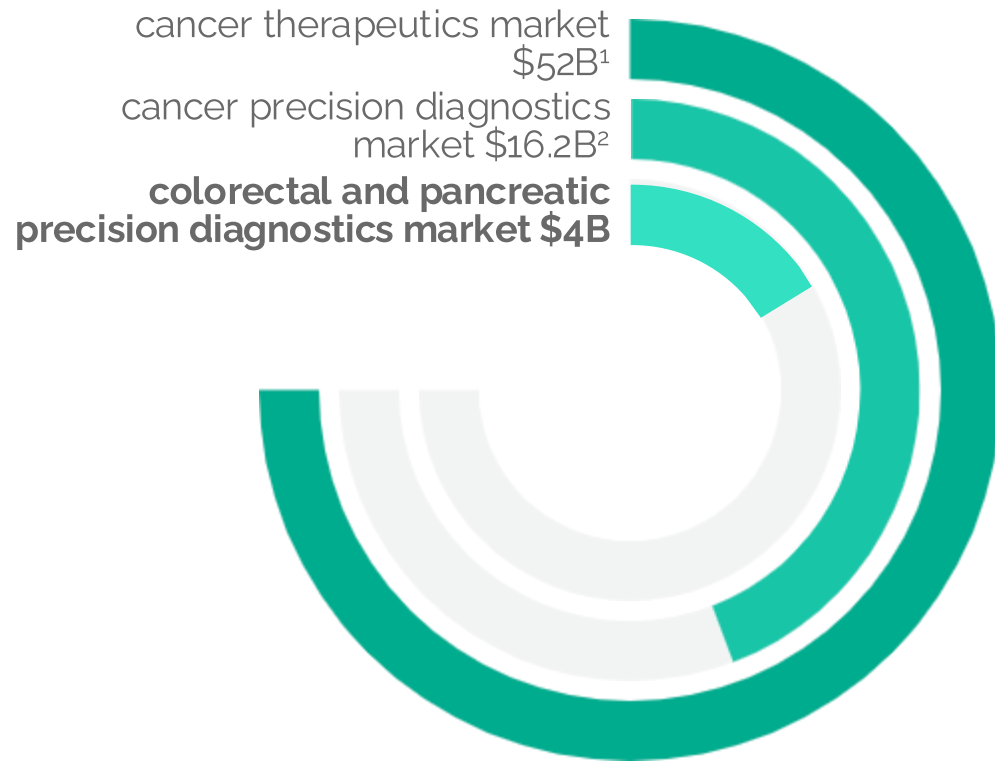
Strategic funding to scale



This technology has potential for a multi-billion \$ opportunity

Market

Initial focus on **\$4B** precision diagnostics market in **Colorectal** and **pancreatic** cancers



Precision diagnostics
market CAGR

11.5%

2023 – 2028



**Chemotherapy will remain
the primary treatment
method until 2040**

There will be a 50% increase in the
number of patients that will require
chemotherapy until 2040.³

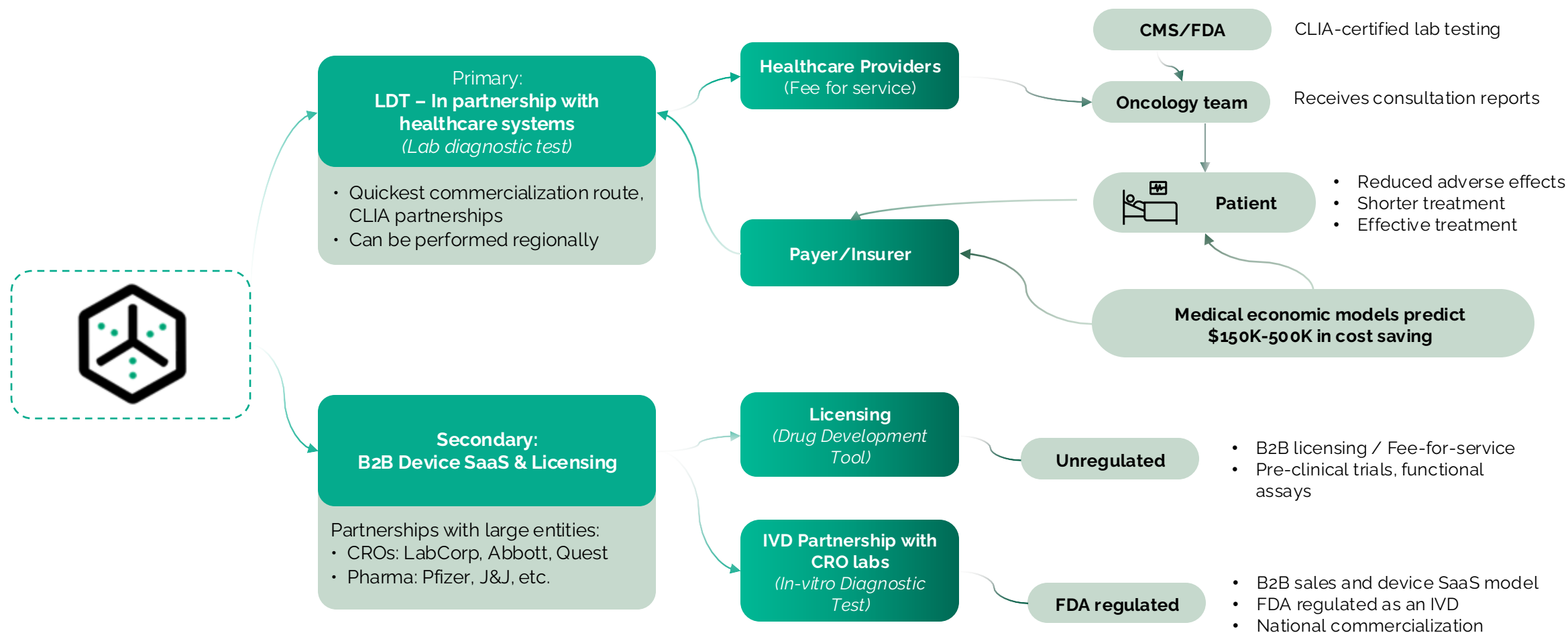
¹ Average diagnostics cost in the US today, based on American Cancer Society report, Sandy McDowell, Director, Digital Research Content.

² "Precision Medicine Market Global Forecast to 2028," MarketsandMarkets, September 2023.

³ Wilson, Brooke E., et al., The Lancet Oncology 20.6 (2019): 769–780.



Revenue model: To initially capitalize on SaaS and licensing



Milestones to-date

+\$7.6M raised in non-dilutive and dilutive capital

Non-dilutive Capital: **\$5.4M+**



Dilutive Capital: **\$2.2M**



**Raising \$10M in Series A
for commercialization**
(\$2M secured)

Today

2021

- Clinical Validation
- BioBank
- IP Portfolio
- Accelerators
(MassChallenge, NSF I-Corps, CDL)
- Healthcare Partnerships



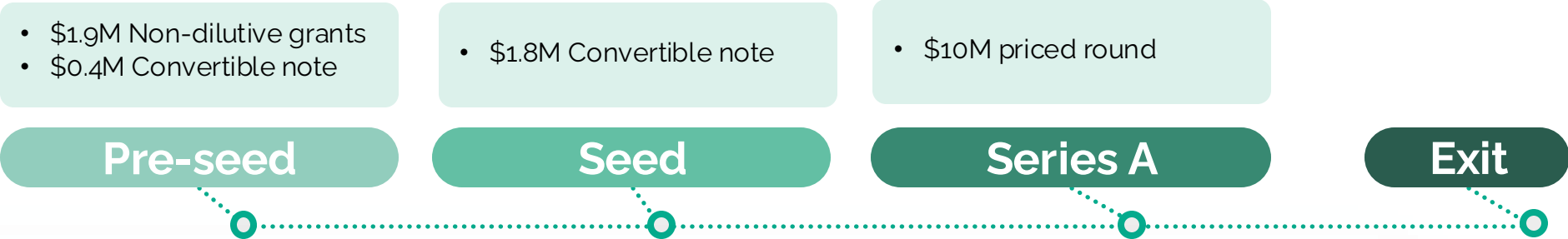
- Pilot Clinical Integration
- Medical Economic Model
- Clinical Deployment
- IP portfolio expansion
- Last round of clinical trials
for pancreatic and colorectal

2027

**Revenue
Q3 2027**



Objectives



Raising \$10M in Series A for **commercialization** (\$2M committed)

- ✓ **Clinical deployment** for colorectal and pancreatic
- ✓ **Growth and Scaling**
- ✓ **Expansion to other cancers**
- ✓ **Pharmaceutical drug development tool services Commercialization**



Comparable Deals

Company	Investments	Years to exit	Exit
Assurex HEALTH	\$39M	5 years	\$405M
PRAXIS	\$22M	5 years	\$698M
FOUNDATION MEDICINE	\$89M	2 years	\$629M
organovo	\$37M	6 years	\$733M
Average	\$47M	5 years	\$616M

Potential Exits

Category	Example
Genomic Oncology Companies	Quest Diagnostics FOUNDATION MEDICINE
Diagnostic Companies	BD Abbott
Pharmaceutical Companies	BAYER Pfizer Johnson & Johnson
CRO Labs	IQVIA



Team



Armin Rad, PhD
Co-Founder and CEO

Over 15 years cancer drug delivery experience, 7 years of medical device experience



Leila Daneshmandi, PhD
Co-Founder and COO

Over 10 years tissue regeneration experience, 5 years venture strategy consulting experience



Bret Schipper, MD
Chief Medical Officer

Chief of Surgical Oncology and Director of Oncologic Surgery at Hartford Healthcare



Joel Levine, MD
Chief Strategy Officer

Medical Oncologist
Founding Director at UConn Colon Cancer Prevention Program



John Strahley, MBA
Chief Financial Officer

Former CFO at Isoplexis Corp, Managing Director at Ironwood Capital, and Senior VP at Webster Bank

Clinical Advisory Board



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Cancer Center
Director at Baystate Health



Charles Giardina, PhD
UConn Professor
Cancer Biology



Vivek Ramakrishnan, PhD
Former Director at
Intellectual Ventures
Former CEO at AxioSonic



Roger Shedlin, M.D., J.D.
Former CEO of Optum
Medical Benefit Management
(United Healthcare)



Reza Amin, PhD
Former CSO at Encapsulate,
CEO at Bastion



John Birk, MD
GI/Hepatology
Oncologist at UConn Health



Danny Khalil, MD
MSKCC Gastrointestinal
Medical Oncologist & Drug
Development Specialist



Gerald F. Vovis, PhD
CEO at Vovis
Enterprises



Mu-Ping Nieh, PhD
UConn Professor
in Materials Science



Dave Menard, ESQ
Partner, BGM Law
Legal



Alvaro Menendez, MD
Medical Oncologist at
Hartford Healthcare



Matthew Strickland, MD
Gastrointestinal Medical
Oncologist at Harvard/MGH



Ali Tamayol, PhD
UConn Professor
Microfluidics



Jennifer Read GMPro™
Helios Spectrum
Consulting, PM



Elizabeth Galletta, ESQ
Partner, BGM Law
IP

Business & Technical Development



Memorial Sloan Kettering
Cancer Center



MASSACHUSETTS
GENERAL HOSPITAL
HARVARD
MEDICAL SCHOOL

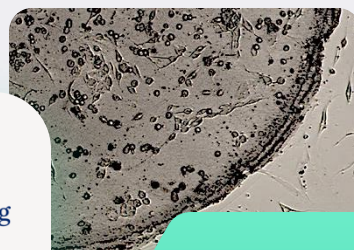
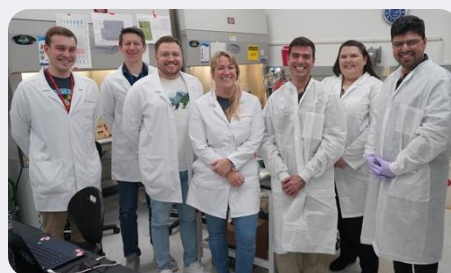
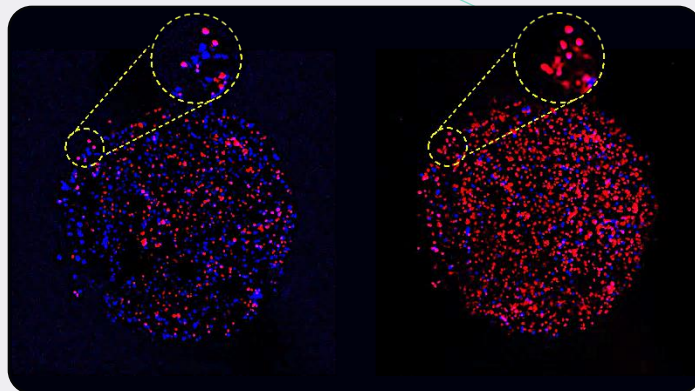
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SPACE TANGO





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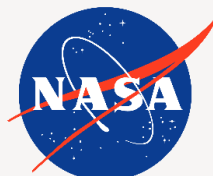
www.encapsulate.bio



[linkedin.com/company/EncapsulateBio](https://www.linkedin.com/company/EncapsulateBio)



info@encapsulate.bio



\$7M+

Total funding to date
(\$5M non-dilutive)

\$10M

Raising Series A

6 + 7

Full-time and part-time
team members