



MEDiC

Cancer immunotherapy
powered by functional genomics

Mission

Our mission is to develop
first-in-class immunotherapy
for solid tumors

"After immunotherapy...
they didn't find any
cancer at all."

JIMMY CARTER
Former U.S. President



PROBLEM

01.
Immuno-oncology drugs
unsuccessful with solid tumors
02.
Patient responses are
extremely variable

SOLUTION

A platform that can identify
immuno-oncology drug candidates
for highly variable solid tumors

FOUNDERS & CORE SCIENTISTS



Kyuho Han, Ph.D
CEO / Co-founder

Stanford Ph.D
Systems Biology,
Genetics

Published first-author CRISPR papers
in top journals : **Nature**, **Nature**
Biotech., **Cancer Discovery**.



Hong-Pyo Lee, Ph.D
CTO / Co-founder

Stanford Ph.D
Mechanical E.,
Bioengineering

Published first-author biomaterial
papers in top journals : **Nature**
materials, **Nature comm.**, **Science Adv.**



Ki Eun Pyo, Ph.D
Sr. Scientist

SNU Ph.D.,
Stanford Postdoc
Immunology,
Oncology

Studied epi-genetic mechanism of
autoimmune disease.
immunology & epi-genetics expert

MEDiC TEAM



Celine Lai
Research assistant

UCLA graduate



David Wei
Research assistant

UC.Davis graduate



Dr. Michael Bassik
Associate faculty

Stanford Genetics



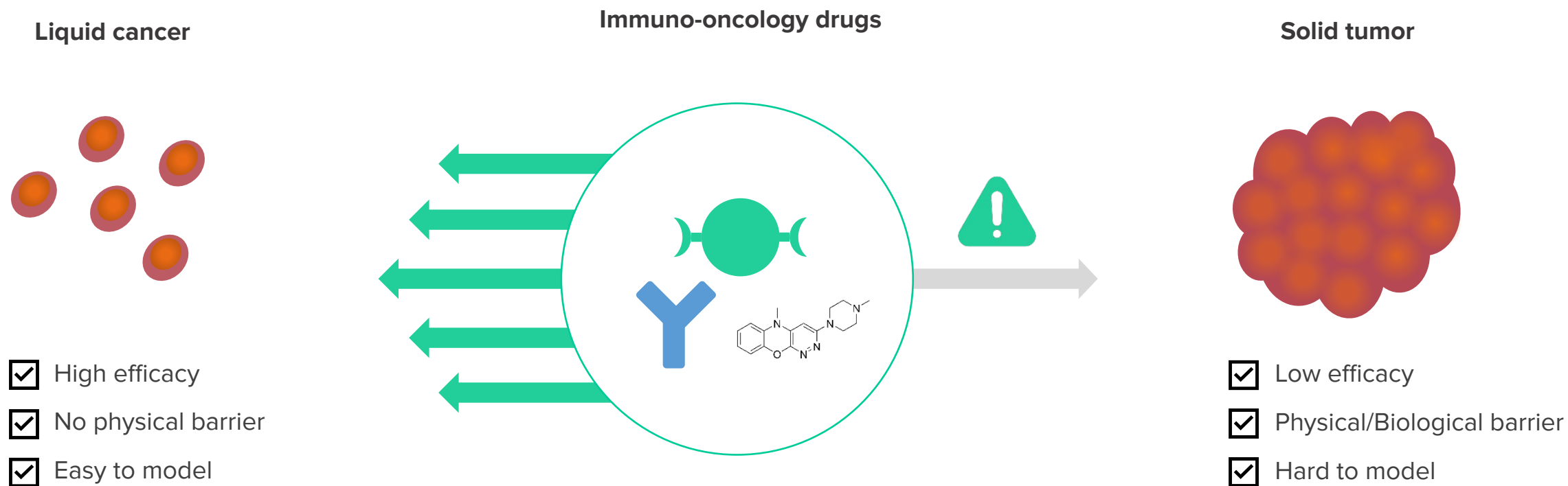
Dr. Ovijit Chaudhuri
Associate faculty

Stanford Mechanical E.

SCIENTIFIC ADVISORS



Immuno-oncology drugs have not worked well against solid tumors

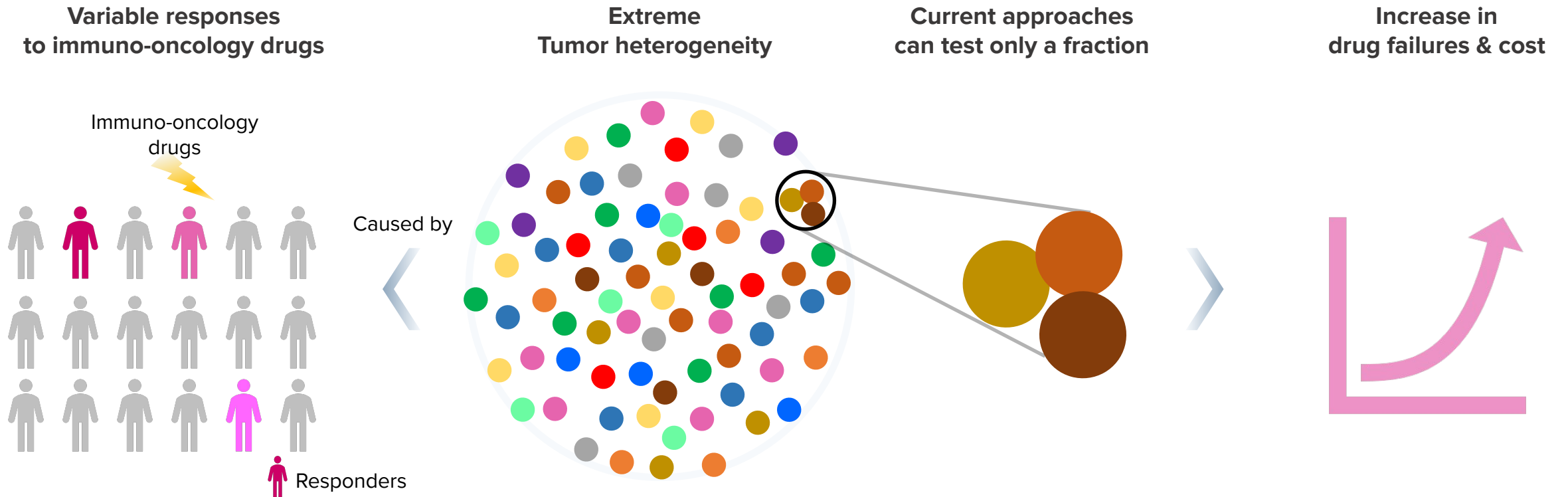


Unmet needs:

Solid tumor models to identify immuno-oncology drugs that work for solid tumors

Problem II

Tumor heterogeneity causes variable responses to immuno-oncology drugs

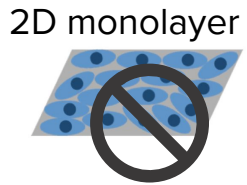


Unmet needs:

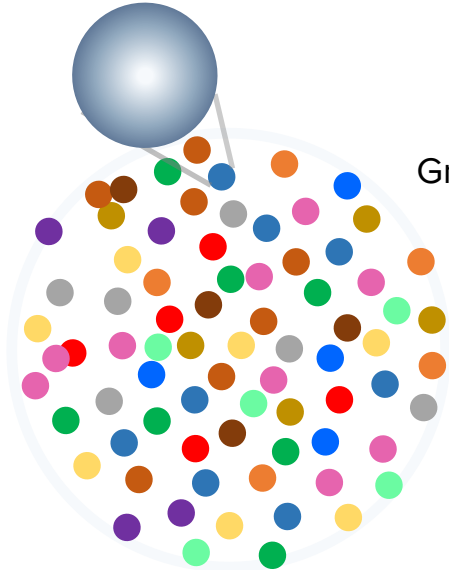
System that can model the vast tumor heterogeneities to identify targeted immunotherapies

High-throughput immuno-oncology drug discovery platform built with **cancer organoids** and **CRISPR**

1 Solid tumor models
(cancer organoid)



3D solid tumor

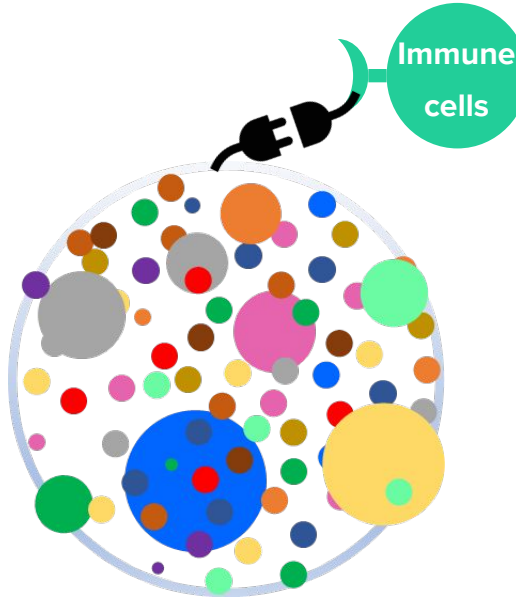


2 Millions of tumor variants
generated by CRISPR

Grow out tumors



3 Scalable organoid culture
w/ immune cells



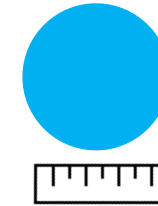
Measure



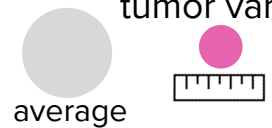
4 Tumor size measurement by
*NGS to identify drug targets
(Functional Genomics)

*NGS : Next Generation Sequencing

Immune-resistant
tumor variant



Immune-sensitive
tumor variant



average

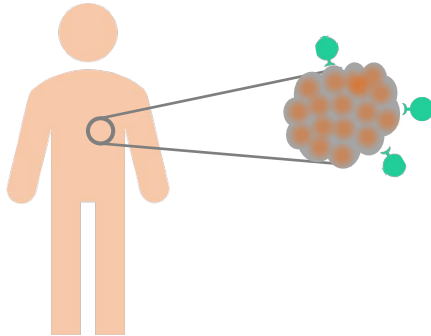


Immuno-oncology
drug candidates

Key advantages

Most in vivo like models at scale,
producing millions of functional data for novel immunotherapies

I. Most in vivo like



- ☑ 3D solid tumor model
- ☑ Cancer-immune co-culture

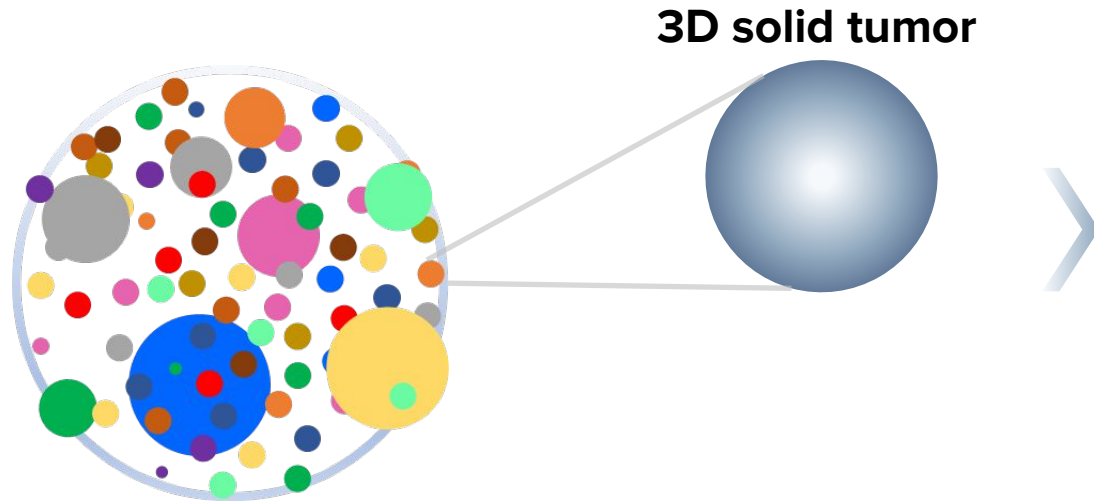
II. Maximized throughput



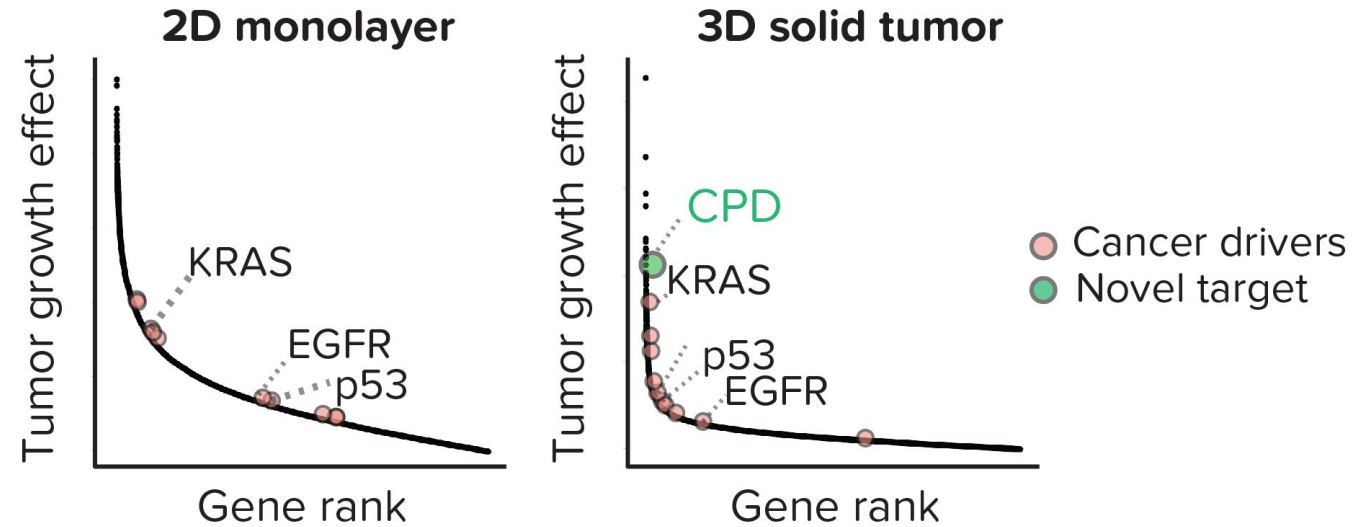
- ☑ Millions of tumor variants in microcapsules
- ☑ Data matrix w/ millions of functional data

Key advantage I : Most in-vivo like models

3D solid cancer model to predict immuno-oncology drug targets



**Maximized cancer driver detection
in 3D solid tumor models**



A provisional patent application has been submitted for CPD
by Stanford Office of Technology Licensing

Published in
nature

Key advantage I : Most in-vivo like models

Cancer-Immune co-culture system :

ImmuneBridge™ to connect cancer and immune cells

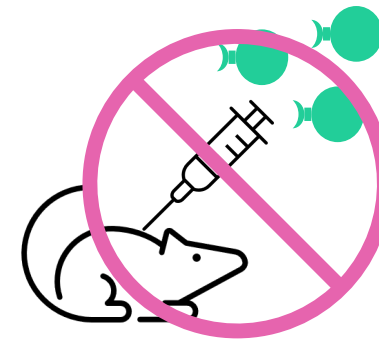
ImmuneBridge™ that enforces selective interactions
b/w immune cells and any cancer models



Scalable, Simple, Universal, & All human

Do not require mouse models for T-cells

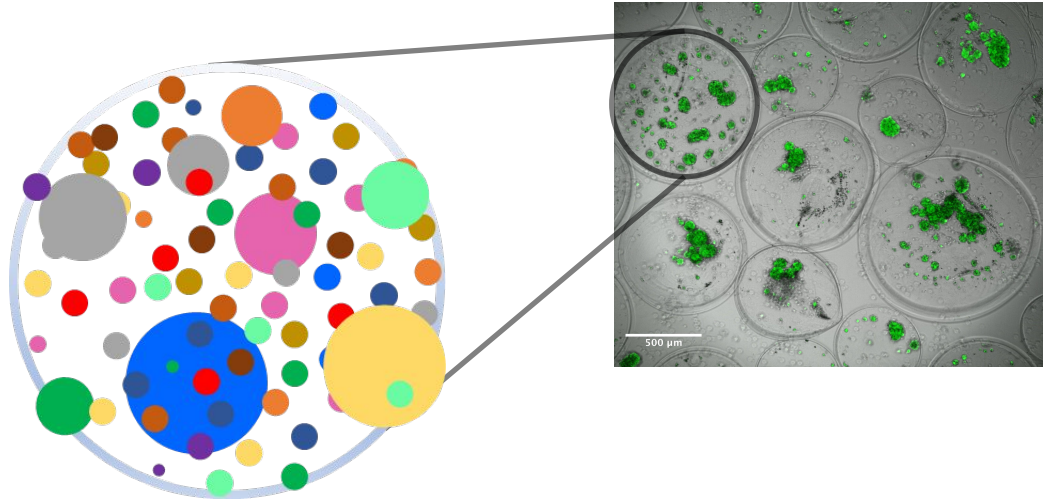
Works for virtually any human cancer models



Key advantage II : Maximized discovery throughput

Microcapsules to culture millions of tumor variants at unprecedented scale

**MEDiC's proprietary
microcapsule-based tumor culture system**



100 X Scale w/
1 / 266th Reduced time
(for millions of tumor variants)

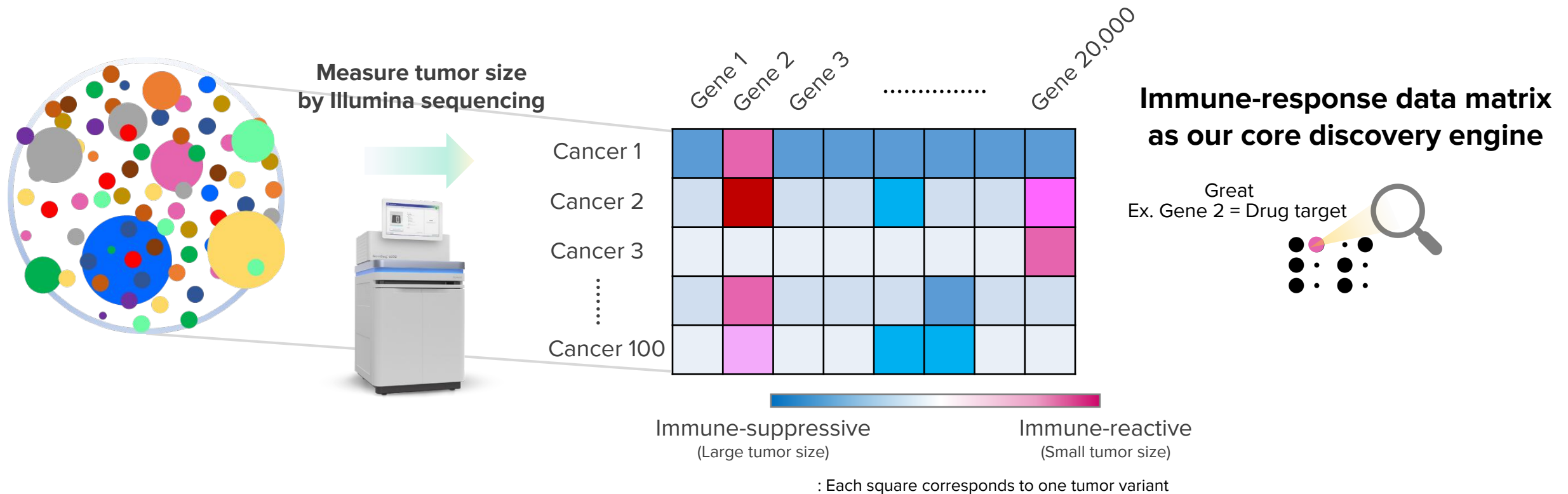
	Previous system	MEDiC's system	Reduction
Time	8,000 hrs	30 hrs	
Cost	\$1,000,000	\$50,000	

Table 1. For genome-scale CRISPR screens in one hundred 3D cancer models

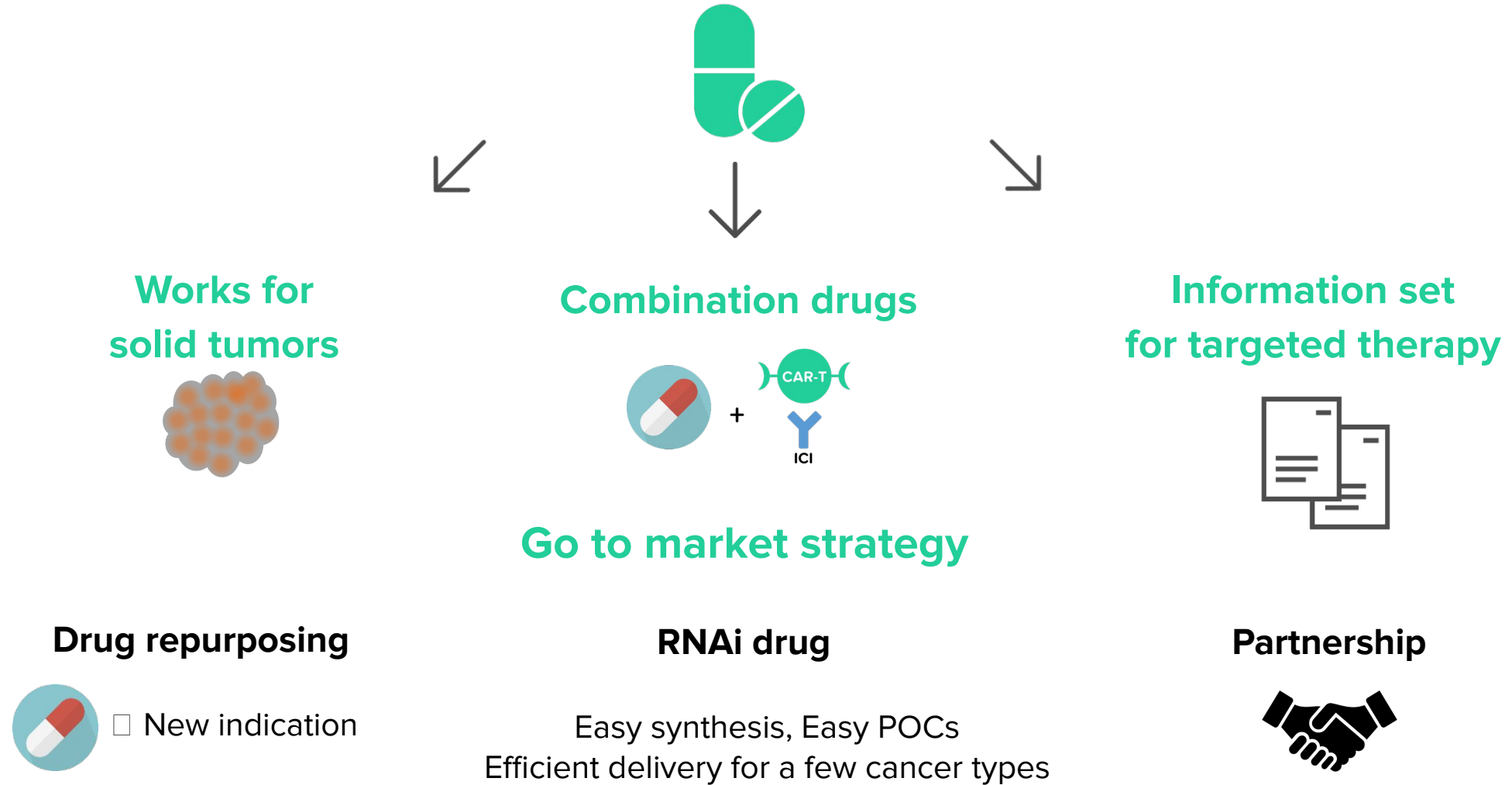
Key advantage II : Maximized discovery throughput

Data-driven, systematic identification of immuno-oncology targets

**Size matrix for millions of tumor variants =
functions of tumor variants for immune response**

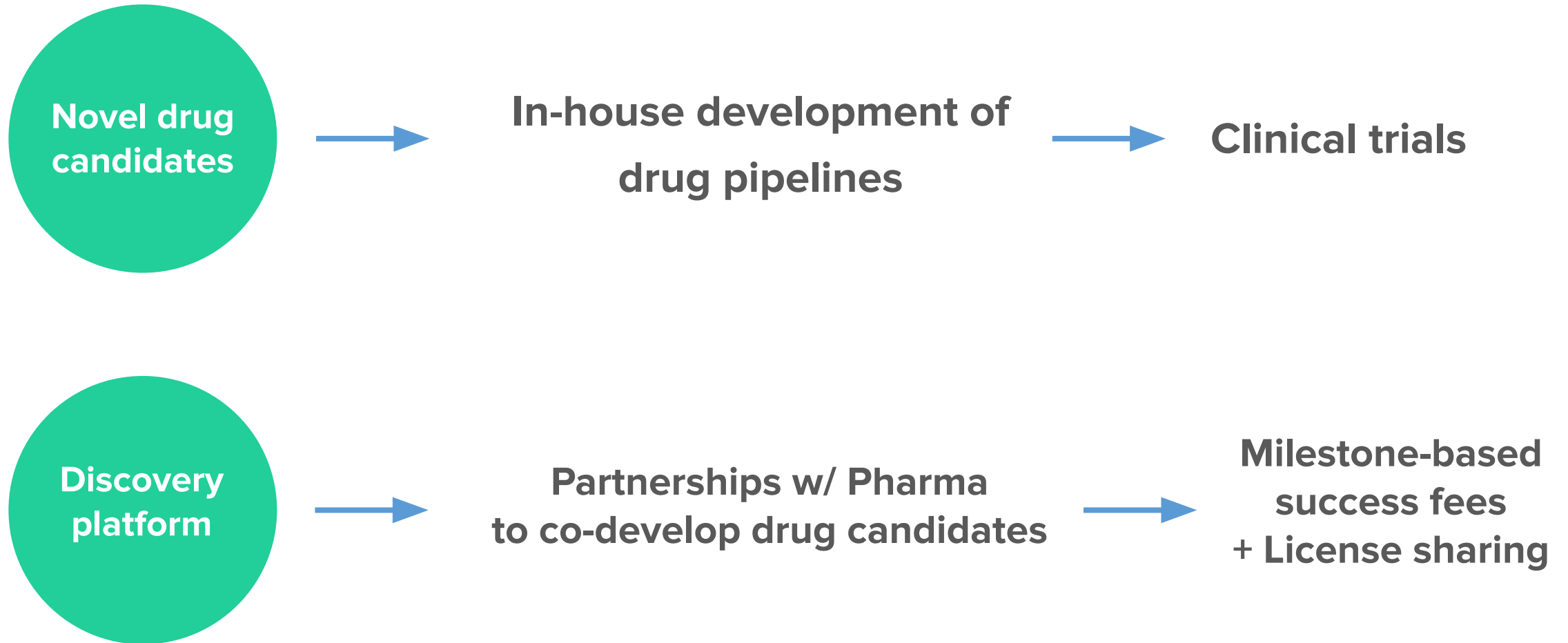


Novel immuno-oncology drug candidates



Business Model

A hybrid in-house development / licensing model



Huge market opportunity with rapid growth. Blue ocean in solid tumor space



\$ 56.8 Billion +
(2019, CAGR 8.7%)

Immuno-oncology drugs
Immune check-point inhibitors (ICI)
+ CAR-T + Cancer Vaccines

\$ 14.3 Billion



\$ 8.06 Billion



\$ 3.9 Billion



Blue Ocean

Immuno-oncology drugs that
work for solid tumors

\$ 100 Billion +
(by 2026)

MEDiC
Solid tumors

Competitive landscape

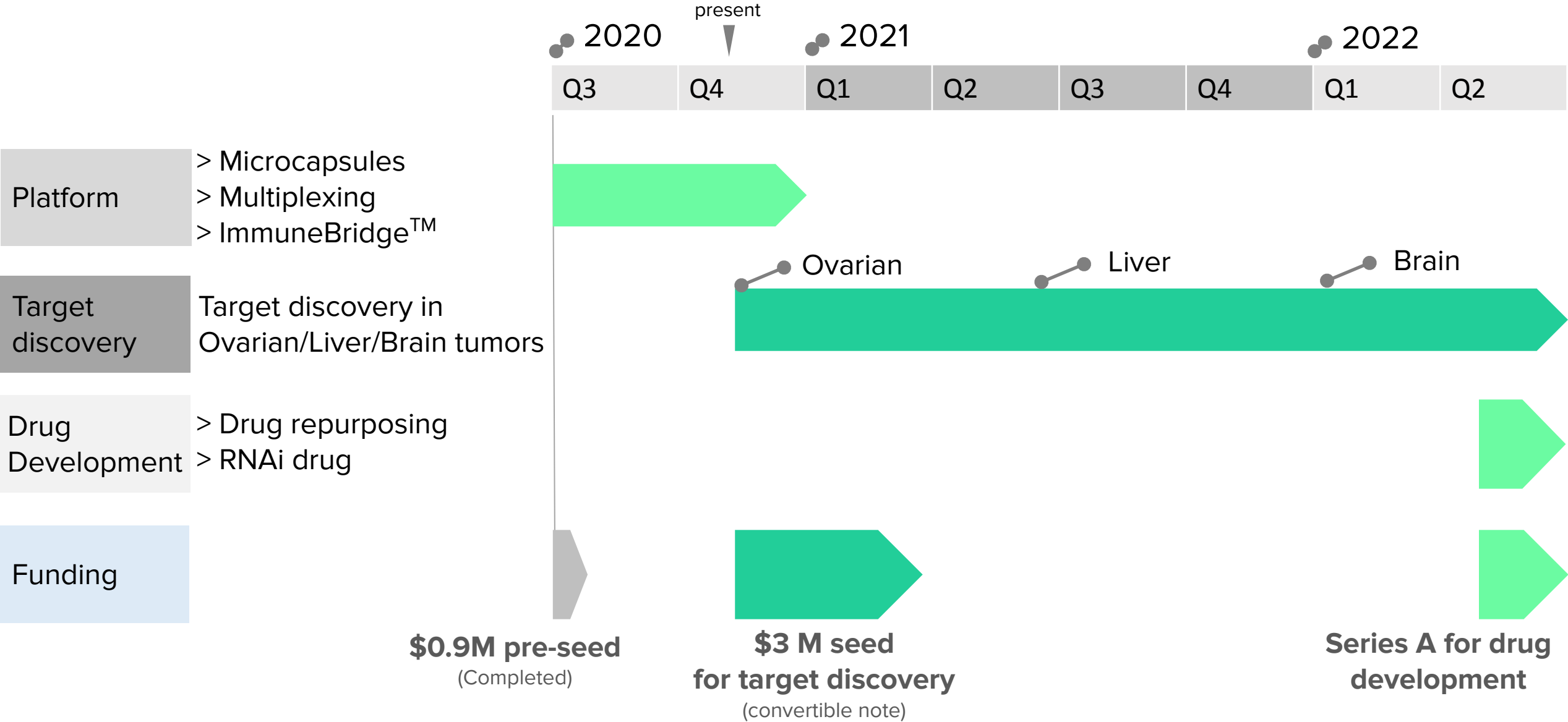
MEDiC outcompetes others in discovery throughput and target diversity

Target diversity
(Potential for identifying cancer-specific
novel targets)



Throughput of immuno-oncology drug
discovery platform

Milestones



We will open the door for a new paradigm in immuno-oncology

- ☑ **First** high-throughput immuno-oncology drug discovery platform for solid tumors
- ☑ **Best** performance enabled by most in vivo like models
- ☑ **Largest** throughput to identify targeted immunotherapies for various solid tumors
- ☑ **Strong** scientific expertise across genetics, immunology & bioengineering

For more questions, please contact us
kyuho@medic-life-sciences.com

