

Conquer Cancer through A.I.

About Lunit



Founded in Aug 2013

1st Generation Medical AI Startup

250+ Employees

30+ AI researchers, 10 MDs



TECHNOLOGY

International Recognition



TECHNOLOGY
PIONEERS
2020



DIGITAL
HEALTH 150
2019, 2020



AI 100
2017

Top-rank in A.I. Competitions

Camelyon
2017



1. Lunit
2. MGH CCDS
3. Eindhoven Univ. of Tech

MICCAI Grand
Challenge
2016



1. Lunit
2. IBM Research Zurich
5. Microsoft Research Asia

Main Task
(CLS-LOC)
2015



1. Microsoft Research Asia
5. Lunit
7. Google

MEDICAL EXPERTISE

100+

Papers / Abstracts
Published

JAMA Oncology

THE LANCET
Digital Health

ASCO

AAGR

30+

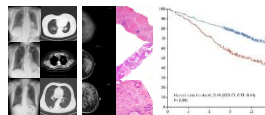
Research Partners

with leading institutions like:



5M+

High quality images
used for AI training



All images used are multi-dimensional data paired
with CT/Biopsy/Clinical outcome data

COMMERCIAL SUCCESS

400+ Paying Customers (Sites)

94%+ Retention Rate

30+ Countries and more



50% Market Share of Partners
(CXR, MMG)



How We Conquer Cancer through AI

PROBLEM

FN 30%^{1,2)} **False Negative**
Chest X-ray,
Mammography

FP 95%²⁾ **False Positive**
Mammography

30%³⁾ **Medical imaging**
Annual Growth

4%⁴⁾ **Radiologists**
Annual Increase

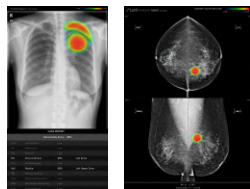
\$200B⁵⁾ **Spent on Cancer Drugs**
Globally per Year

25%⁶⁾ **Average Response Rate**
Cancer Drugs

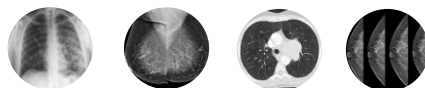
SOLUTION

Cancer Screening Lunit INSIGHT

50% more patients can be Diagnosed Earlier



Diagnostic Biomarker



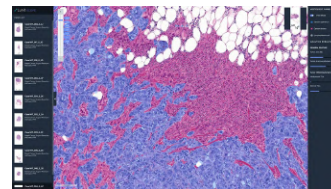
Chest X-ray Mammography Chest CT DBT

The AI works as a diagnostic biomarker that detects early-stage cancer and other findings from existing imaging methods

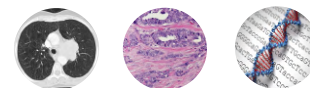
GOAL

Cancer Treatment Lunit SCOPE

50% more patients Identified for Immunotherapy



Therapeutic Biomarker



CT/MR Pathology DNA/RNA

The AI works as a therapeutic biomarker that provides therapy response information that can critically affect treatment outcome of cancer patients

Increase Survival

1) NLST trial, NEJM 2012

2) Breast Cancer Screening Consortium data

3) China Market INSIGHT 健康界 (China)

4) China Market INSIGHT 健康界 (China)

5) Global Oncology/Cancer Drugs Market 2018-2025, Allied Market Research

6) End-of-Life Physician Education Resource Center

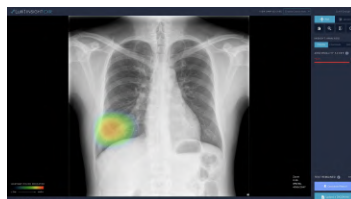
Cancer Screening

Improving Diagnostics with AI

Our Proprietary AI Solutions for Radiology

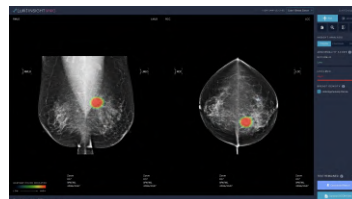
- ✓ 96%-99% accuracy detection of abnormalities
- ✓ Localization of detected findings
- ✓ Abnormal score of detected findings

Lunit INSIGHT CXR



Detects lung cancer & 9 other findings

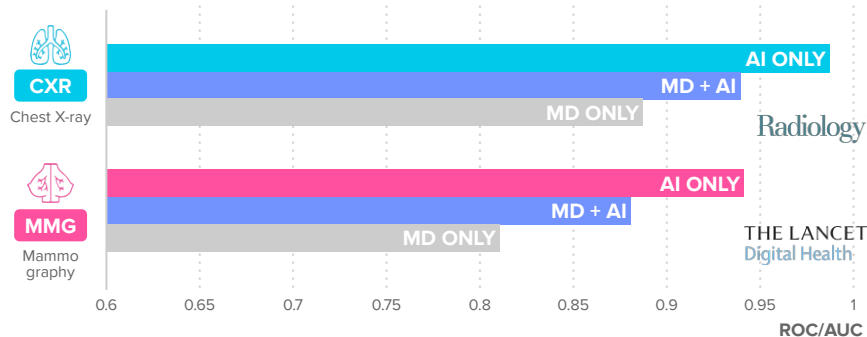
Lunit INSIGHT MMG



Detects breast cancer

Clinical Validation

- Our AI has shown very high performance level (even higher than the highest-level experts)
- Our AI significantly helps users in terms of diagnostic accuracy and workflow efficiency



Overall Value Proposition



Clinical Outcome

20% ↑ Detection rate
Earlier Dx of diseases



Cost Reduction

40% ↓ Reading time
30% ↓ Recall rate (MMG)

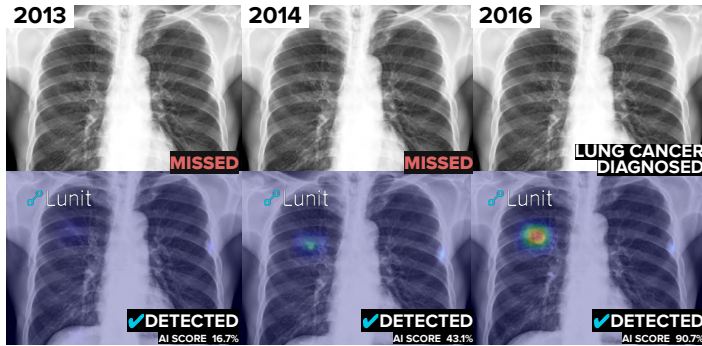


Patient Experience

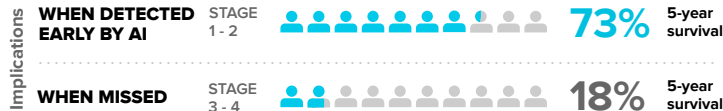
↑ Faster Turnaround time

Increase Detection Accuracy: Potential for Early Diagnosis of Cancer

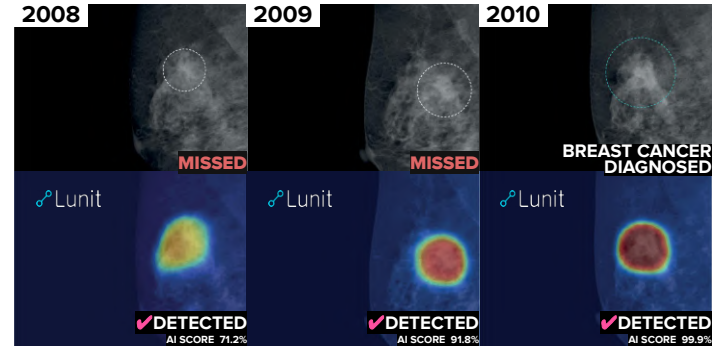
50% of lung cancer patients can be diagnosed earlier with Lunit INSIGHT **CXR**



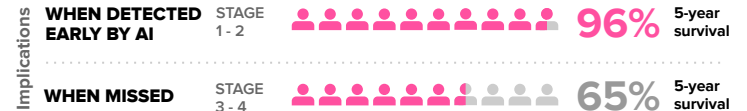
Lunit INSIGHT successfully analyzed the chest x-ray image of a 54-year-old male patient, detecting lung cancer that had been missed since 3 years ago.



40% of breast cancer patients can be diagnosed earlier with Lunit INSIGHT **MMG**



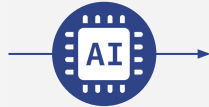
Lunit INSIGHT successfully analyzed the mammogram of a 59-year-old female patient, detecting breast cancer that had been missed since 2 years ago.



Scaling Out Globally with Medical Device Giants



Lunit
We're the only AI startup
doing this...

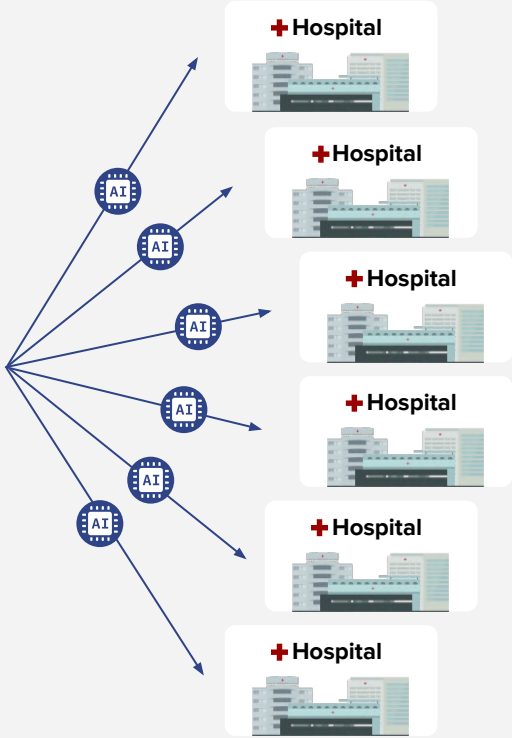


Partners
Distribution with market giants

Market Share
50%

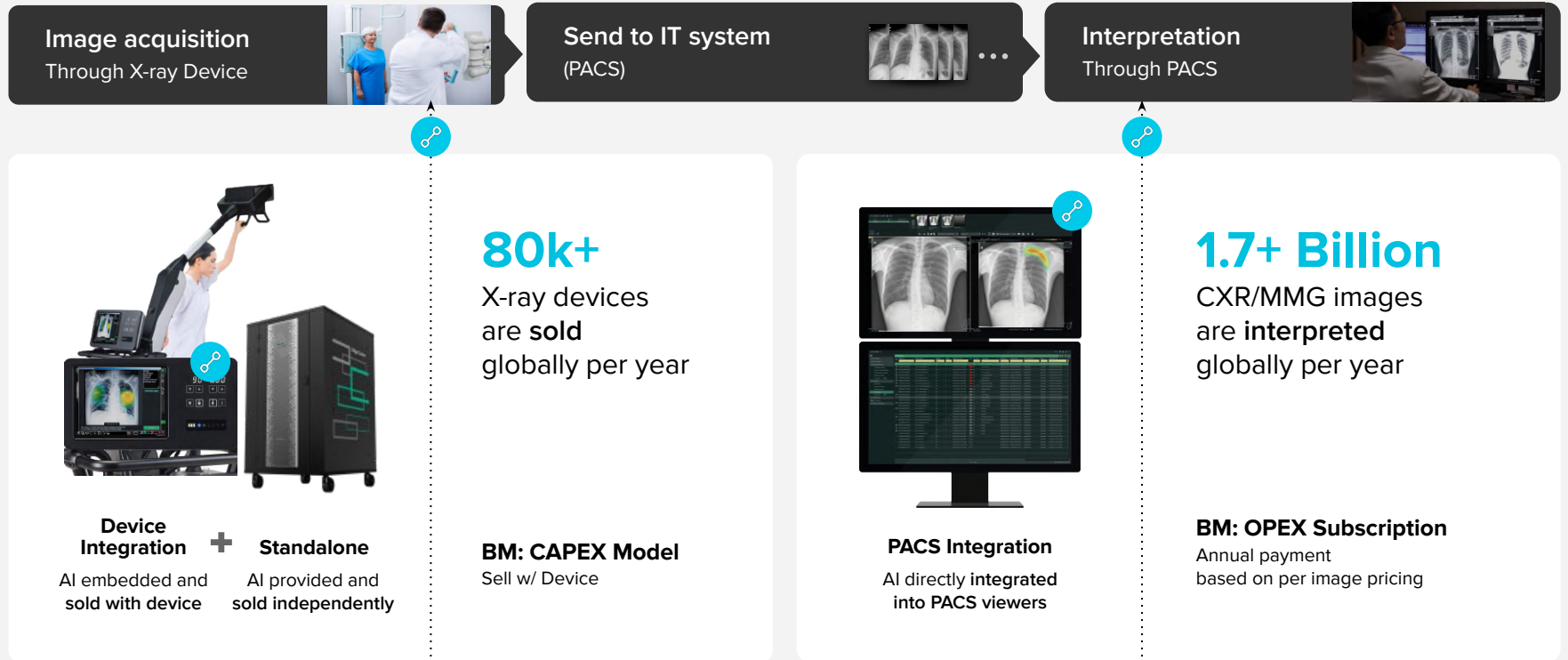


GE Healthcare
FUJIFILM
PHILIPS
AGFA HealthCare
SECTRA



How We Partner & Integrate with Medical Device Giants

Workflow of medical imaging & How AI can be applied



Initial Success in Commercialization: From Korea to 30+ Countries

'7 out of 10' Top 10 Tertiary Hospitals in Korea

Currently use Lunit insight in actual clinical practice:



400+ Paying Customers (Sites)

30+ Countries

8M+ Images Tested



Italy



China



Korea



Thailand

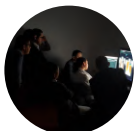


Indonesia

Customer Testimonial

"Once I got used to the AI, I can't picture myself reading images without AI. AI has helped me greatly reduce the time it takes to read images, and it feels good to be reassured as a double-check."

Mexico



Panama



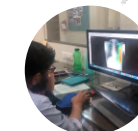
Brazil



UAE

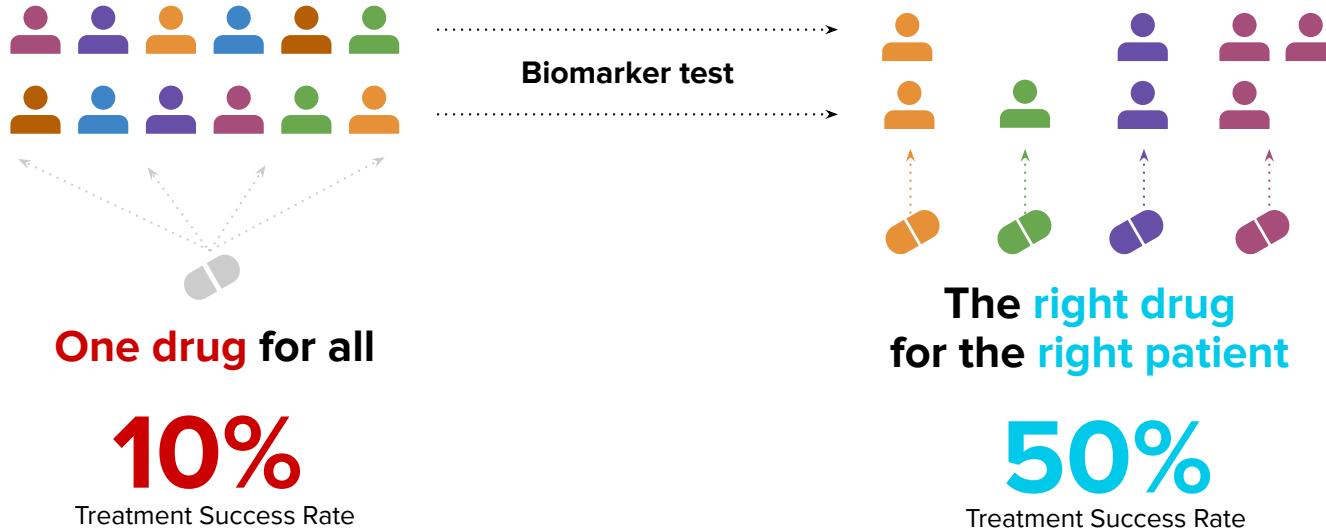


India



Cancer Treatment

Key for Effective Cancer Treatment Is Personalized Therapy



Patients Respond Differently to Specific Treatment
Knowing Who Responds to What Treatment Is Key

Tissue Data + AI = Highly Accurate Biomarker for Immunotherapy

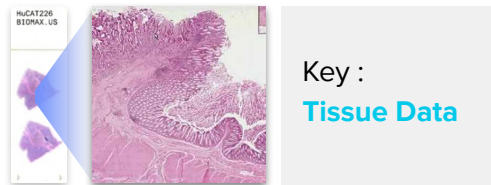
Immunotherapy

Drug Target: Immune cells to activate their cancer killing activity

Biomarker

PD-L1 (currently SoC) (but accuracy is very low)

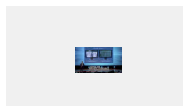
Focuses on **boosting the Immune cell** to kill cancer cell.



Why Tissue Data?

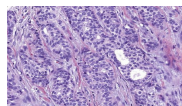
Need to understand complex pattern of immune cells surrounding the tumor to predict response to immunotherapy (DNA/RNA sequencing data has limited predictive value for immunotherapy)

The Complexity of Tissue Data



HD Video
1,280 pixels

VS



Tissue
500,000 pixels

The Importance of AI

It is **impossible** to analyze with **human eye**



Neoplasm
Stroma
Lymphoplasm
Epithelium

1000+ features intertwined



Now **possible** with



Computational Analysis

Pioneer & Conquer "Tissue Phenomics"

Lunit SCOPE

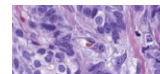
Responder



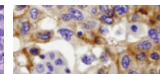
Non-responder



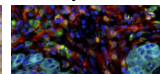
H&E



IHC

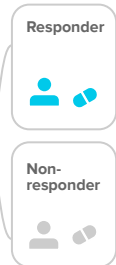
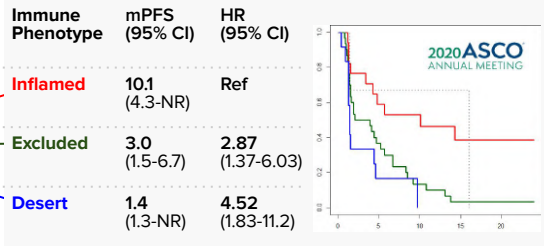
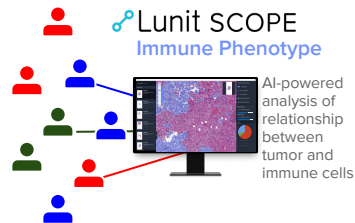


Multiplex IHC



Lunit SCOPE IO: Prediction of Immune Checkpoint Inhibitor Response

Proven High Performance

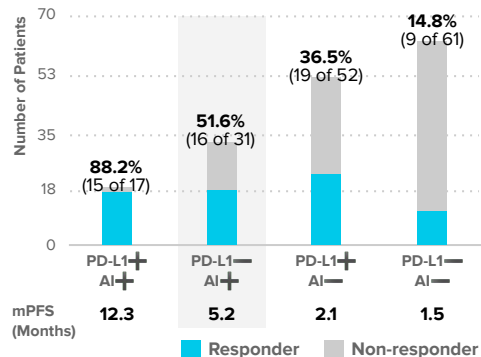
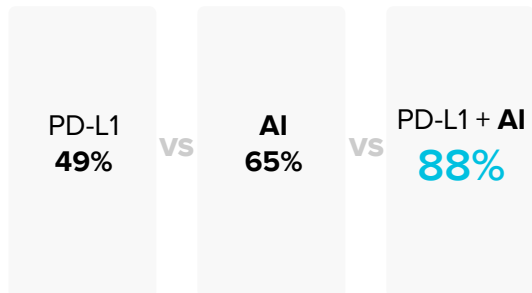


Lunit SCOPE vs PD-L1 & TMB

	PD-L1 \geq 50%	TMB > 10/Mb	Lunit SCOPE
PPV*	0.511	0.525	0.580
NPV*	0.673	0.666	0.777
Accuracy	0.605	0.620	0.691

*PPV: Positive Predictive Value *NPV: Negative Predictive Value

Positive Predictive Value



PD-L1 42% Patients eligible for ICI

2019 ASCO ANNUAL MEETING

+50% responder identification

PD-L1 + AI 62% Patients eligible for ICI

Proven to Be Effective in Biopharma Clinical Trials as Biomarker

Successful Results in Phase 1 Clinical Trials

In active discussion with **10+ biopharma** for collaboration

Active Plans to Continue with Phase 2 Clinical Trials

IO MONOTHERAPY STUDY

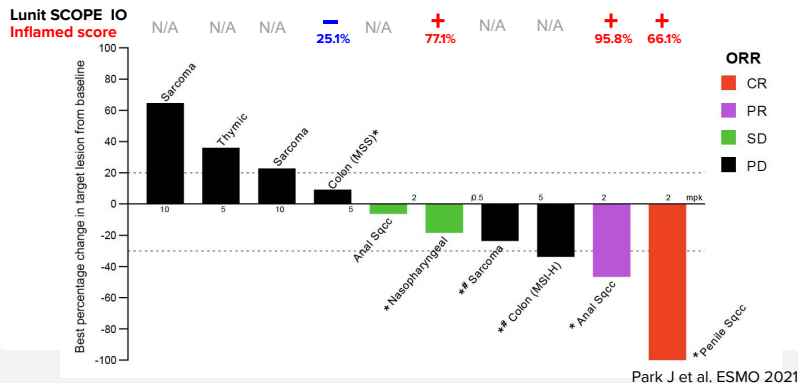
Lunit

Lunit SCOPE AI
Focusing on
TIL in Cancer Epithelium

Ybiologics

YBL-006 (anti-PD-1)

PHASE 1 Clinical Trial
'All-comer' anti-PD-1 inhibitor



Lunit SCOPE

100% Sensitivity

* Responder: RECISTv1.1 PR + SD with PFS > 30 weeks

IO COMBOTHERAPY STUDY

Anti-PD1 + TGF-beta receptor 1 inhibitor combination therapy

Lunit

Lunit SCOPE AI
Focusing on
TIL in Cancer Stroma

Medpacto

Vactosertib
(Stromal modulator)
investigational

MSD

Pembrolizumab
FDA approved

PHASE 1/2 Clinical Trial
MSS Colorectal cancer anti-PD1 + Combination Tx

Group	N	ORR
All analyzed	31	12.9%
Lunit SCOPE+ High Immune-excluded score	16 (51.6%)	25.0%
Lunit SCOPE- Low Immune-excluded score	15 (48.4%)	0%

Kim TW et al. SITC 2021

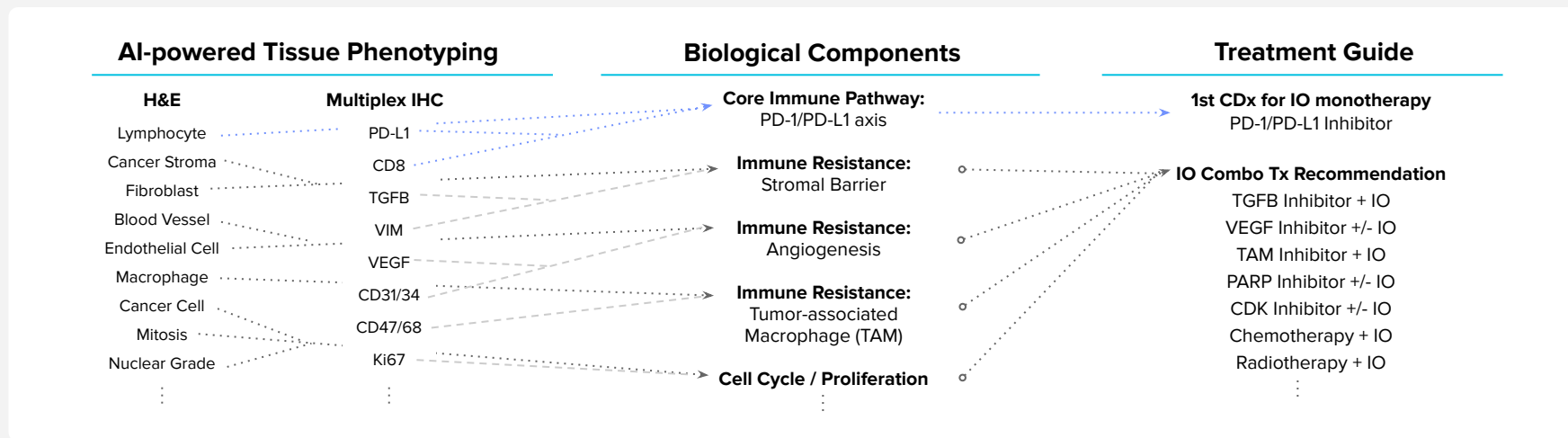
Lunit SCOPE

100% Sensitivity

* Responder: RECISTv1.1 PR

Lunit SCOPE

Next: AI-powered Tissue-based Biomarker Panel for Cancer Therapy



FOUNDATION MEDICINE®

NGS-based Biomarker Panel for Targeted Therapy

Test Result	Matched Drug	Positive% in NSCLC	Positive% in Pan-cancer
NTRK translocation*	NTRK inh.	<1%	<0.1%
EGFR mutation	NTRK inh.	40%	Not applicable
ALK translocation	ALK inh.	5%	Not applicable

Lunit SCOPE

Tissue-based Biomarker Panel for IO Therapy

Test Result	Matched Drug	Positive% in NSCLC	Positive% in Pan-cancer
Lunit SCOPE IO+	anti-PD(L)1	30%	25%**
Lunit SCOPE Stroma+	anti-PD(L)1 + anti-TGFB	30%**	25%**
Lunit SCOPE TAM+	anti-PD(L)1 + anti-TAM	10%**	10%**

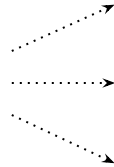
* FDA approved Tissue Agnostic Biomarker

** Estimation from in-house database

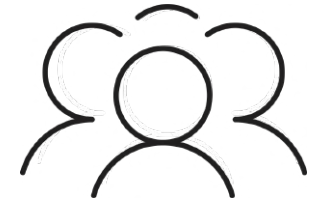
Established Distribution Channel Ready for Commercialization



Lunit SCOPE



Central Lab



Customers

Guardant Health?

World No.1 in liquid biopsy, expanding into other areas of oncology

Covers 75%+ of US oncologists

In active collaboration with 70+ major biopharma companies

NASDAQ since 2018: GH (market cap \$13B, July 2021)

2021 revenue: \$350M+ (expected)



**Major shareholder of Lunit since July 2021
including business collaboration agreement**

Thank You!