Innovate the way we see life





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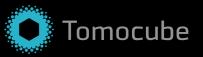
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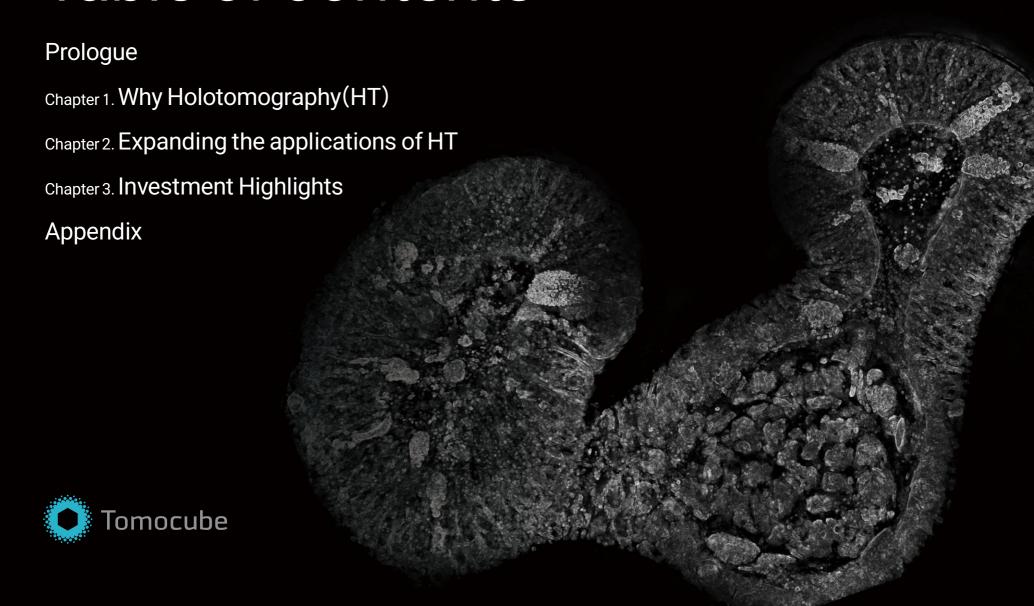
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# Table of contents



## **Paradigm Shift in Cell Analysis**

· · · Growth drivers: 3D Biology & Regenerative Medicine



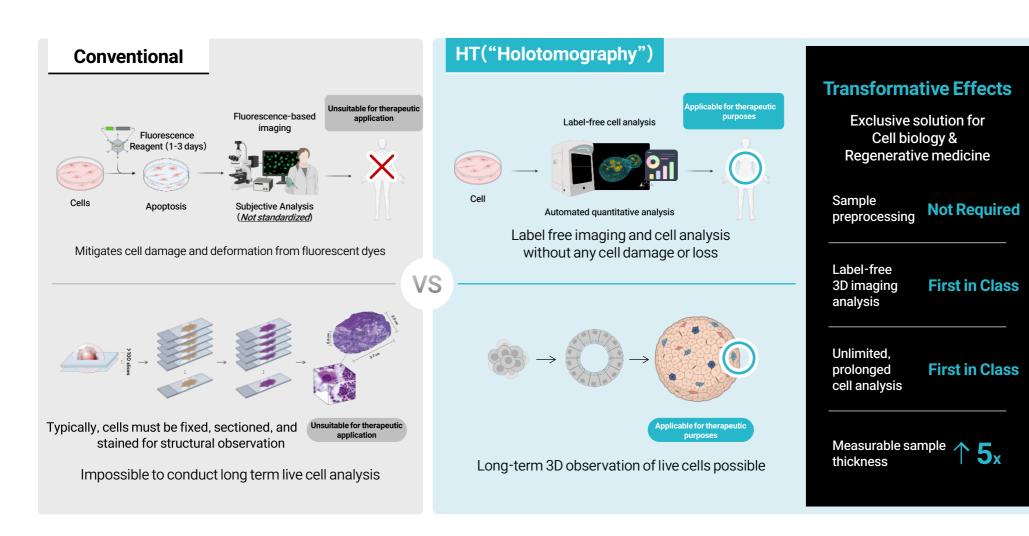
Core: 3D label-free measurement & Al-enabled analysis of living cells, tissues, and organodis



Holotomography: Real-time, high-resolution, label-free 3D analysis of live cells

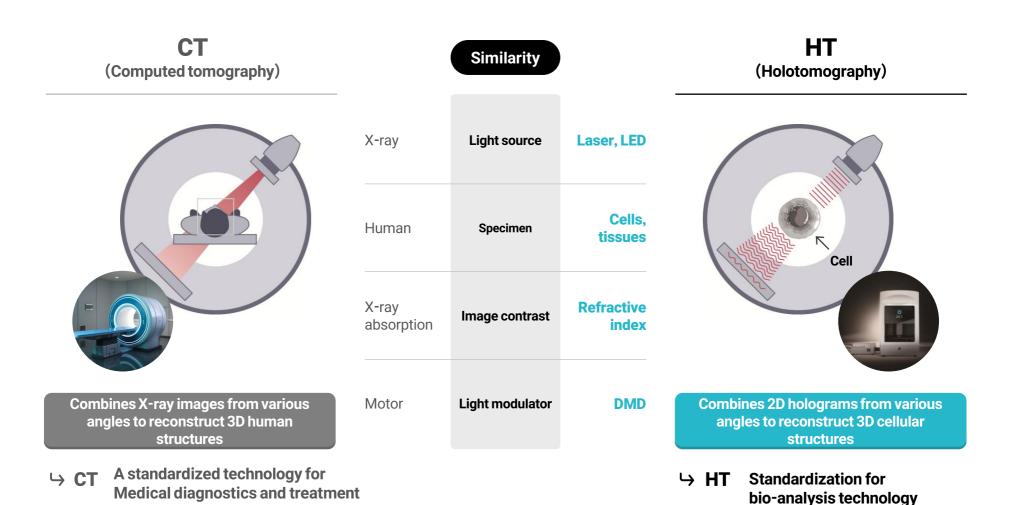
## **Unmet Needs Addressed by Holotomography**

• Fulfilling Unmet Needs in the Advanced Biomedical Sector



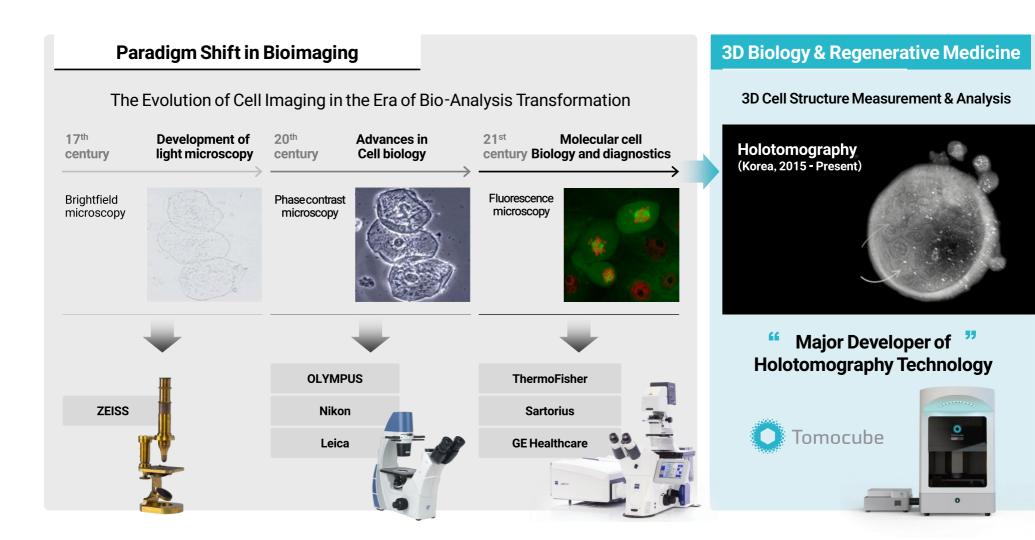
# Setting new standards in cell analysis through Holotomography

•• Just as CT Transformed Diagnosis, HT is Poised to Transform Bioanalysis



# **Leading Advanced Bio/Medical Industry**

• Pioneering Holotomography: From Innovation to Global Commercialization

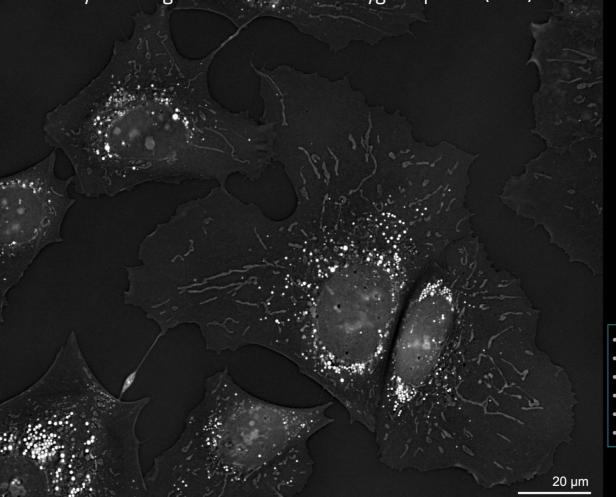


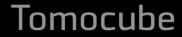




# Label-free 3D Live Cell Imaging

Cellular Responses and Recovery from High Level of Reactive Oxygen Species (ROS)





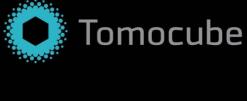
- Cell line: Hep3B
- Microscope: HT-X1
- · Observation duration: 4.5 hr
- Time interval: 20 sec
- Chip: ibidi µ-Slide I Luer
- Flow rate: 0.23 µL/min

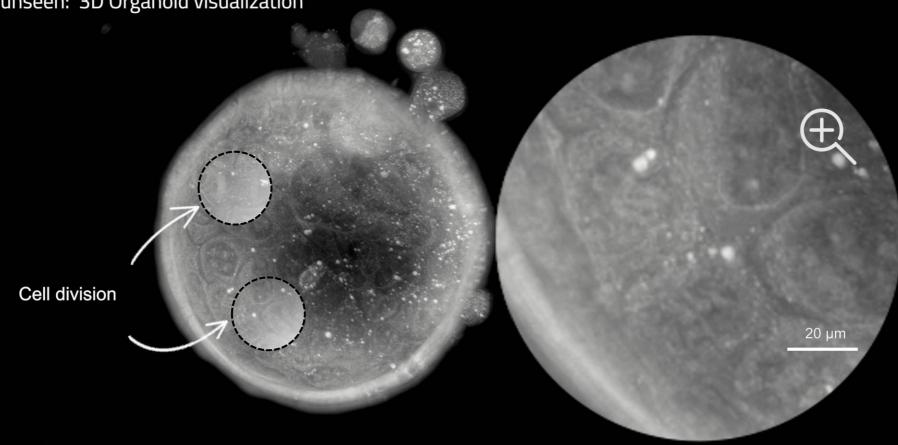




# Label-free 3D live cell imaging

Unveiling the unseen: 3D Organoid visualization

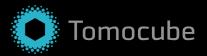




#### Chapter 1.

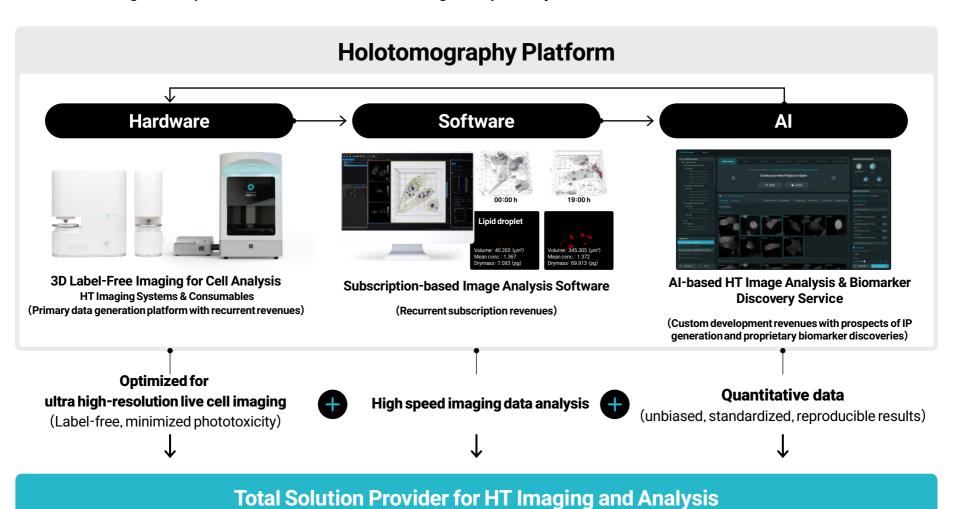
# Why Holotomography (HT)

- 01. Key Advantages of Holotomography
- 02. HT Platform (1) Hardware
  - (2) Software
  - (3) AI
- 03. Distinct Competitive Advantages (1) Holotomography Comparison
  - (2) Cell Analysis Technology Comparison
- 04. Externally Validated Technology



## 01. Key Advantages of Holotomography

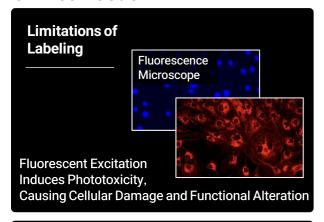
• Establishing a Competitive Business Model Through Proprietary Hardware, Software, and Al solutions

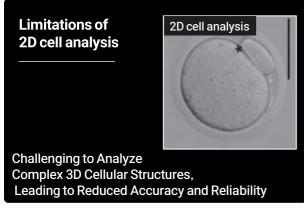


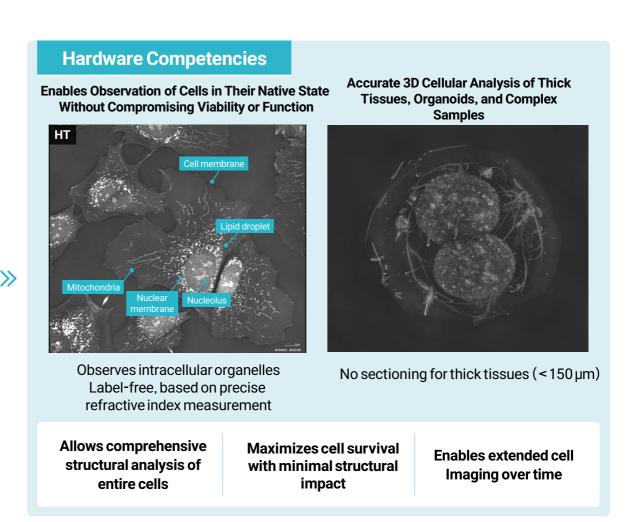
# 02. HT Platform (1) Hardware

Establishing a Standard Protocol for 3D Label-Free Imaging

### **Unmet Needs**







# 02. HT Platform (2) Software

From Custom Solutions to an Integrated Analysis Platform

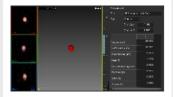
**Software Competencies** 



### **Demand-Based Solution Development**

2017

#### **TomoStudio**



Visualization of 3D HT data and single-cell analysis 2019

#### **Lipid Analysis**



Targeted analysis optimized for specific conditions

### **Expanded application areas** through AI model-based software

2022

### **TomoAnalysis 1.0**



- Al Model-Based Cell Organelle **Analysis**
- Rule-based multi cell analysis
- · Applying uniform logics to big data

2024

### TomoAnalysis 2.0

"

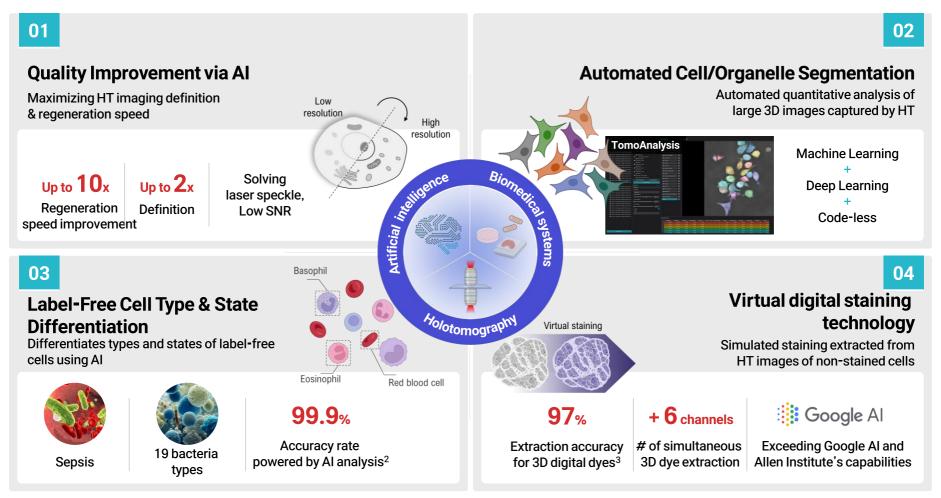


- Real-Time 3D Visualization
- Manageable Analysis Logic System
  - 120 Rule-based modules
- 7 Al-based modules
- 33 Application-Specific Algorithms

Al-based software for cell and organelle analysis

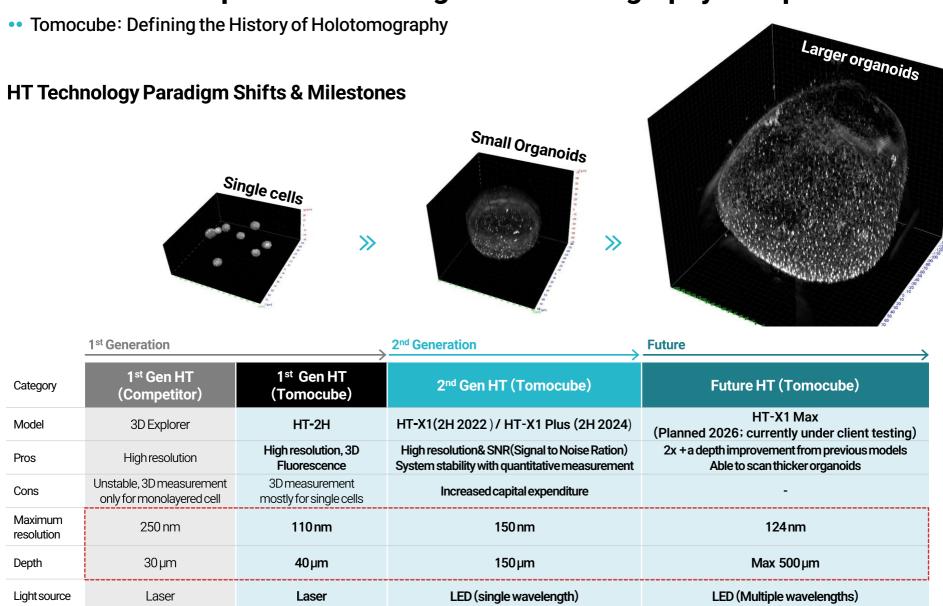
## 02. HT Platform (3) Al

•• World-Leading Al-Powered Analysis Platform for HT Imaging and Biomarker Discovery



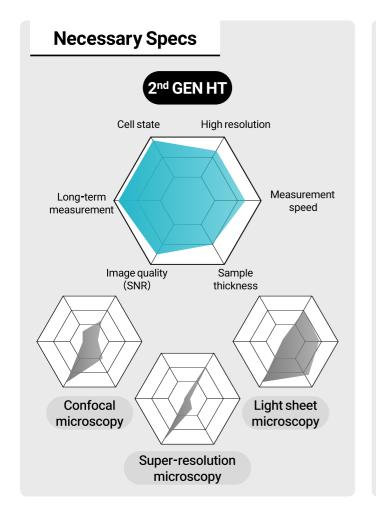
Reference 1: J. Park et al., *Nature Methods* 20, 1645 (2023) Reference 2: G Kim et al. *Light: Science & Applications* 11, 190 (2022) Reference 3: Y. Jo et al., *Nature Cell biology* 23, 1329 (2021)

# 03. Distinct Competitive Advantages: Holotomography Comparison



# 03. Distinct Competitive Advantages: Cell Analysis Technology Comparison

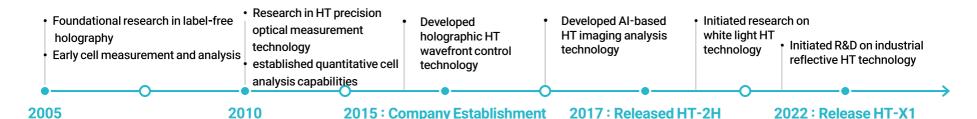
•• Setting the Benchmark in Cell Analysis: Tomocube vs. Competitors



Comparison with Other Optical Devices							
Category	3D Imaging	Resolution	Multimodal Imaging	Thickness	Label-free	Quantitative	Artificial Intelligence
Tomocube (Korea) HT (2 <sup>nd</sup> Gen)	•	•	•	•	•	•	•
S***** (Germany) Bright-field microscopy			0		Δ	Δ	
S***** (Japan) Optical coherence tomography	0			0	0		
N**** (Japan) Confocal microscopy	0	0	0	Δ			
Z****(Germany) Light sheet microscopy	0	Δ	0	0			Δ
M****** (USA) High speed confocal microscopy	0	0	0	Δ		Δ	Δ
N****** (Swiss) HT (1st Gen)	0	0	Δ		0	Δ	Δ

# 04. Externally Validated Technology with robust IP protection

81 Granted and Pending Patents; Domestic & International Recognition



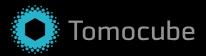
Patents related to core tech **R&D History** 18 years 63 **Publications** R&D Costs KRW 19.8 bn. domestic patents 10 pending domestic patents 25 granted international patents 14 pending international patents 22 granted **Total patents** 81



#### Chapter 2.

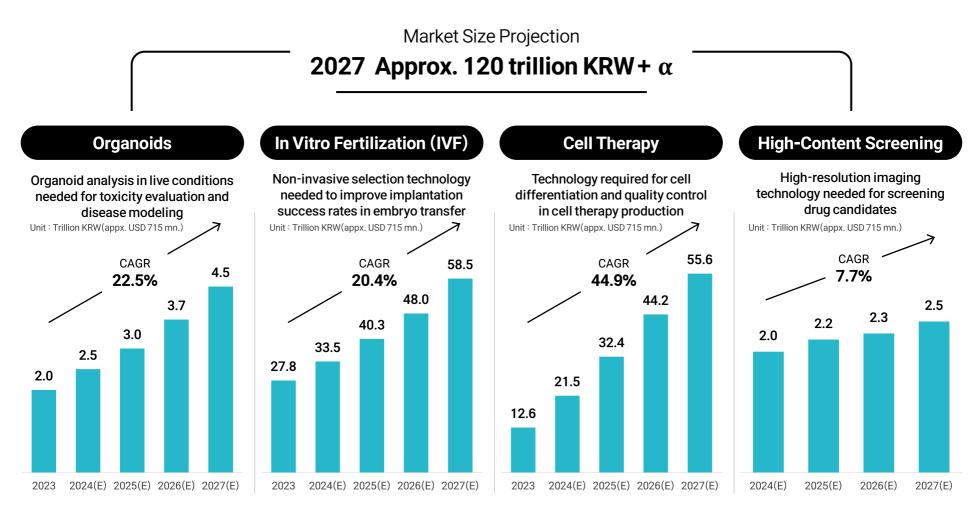
# Expanding the applications of HT

- 01. Tomocube's Target Market
- 02. Opportunity # 1 Organoids
  - Opportunity # 2 In Vitro Fertilization
  - Opportunity # 3 Cell Therapies
  - Opportunity # 4 Drug Development
  - Opportunity # 5 Non-Bio Industrial Applications



## 01. Tomocube's Target Market

• 3D Biology & Regenerative Medicine Market Growth



References: The Insight Partners. Global Organoids Market Forecast, Frost&Sullivan, Fact.MR, Markets and Markets, Future Market Insights, Research and Markets, Stringent Datalytics

# 02. Expanding Applications of HT(1): Organoids\*

· Organoids as a new model in Advanced Bioindustry



**Animal Testing Termination** 

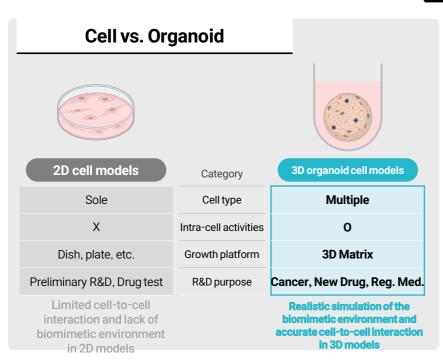
USA(2022), EU(2025)

Organoid-based bio/pharmaceutical paradigm shift

Alternative R&D using organioids

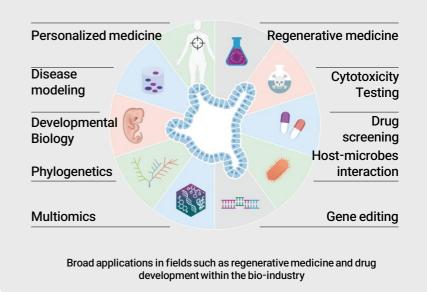
Top 15 global bio/pharmas in preparation





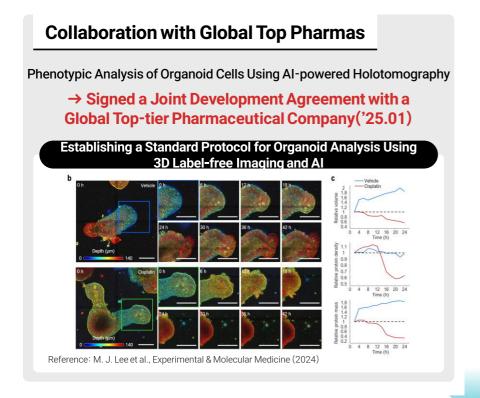
#### \* Organoid: tiny, self-organized three-dimensional tissue cultures that are derived from stem cells

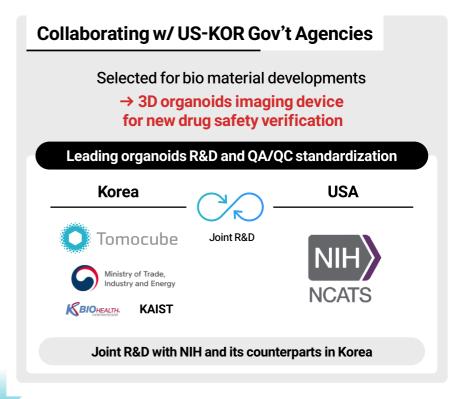
# Application in healthcare



# 02. Expanding Applications of HT(1): Organoids

Standardization of Organoid Analysis Using HT





**Leading Standardization Efforts with Global Enterprises and Government Agencies** 

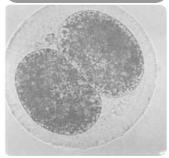
# 02. Expanding Applications of HT(2): IVF

3D Label-Free HT Imaging and AI for Selecting High-Implantation Embryos

### **Conventional Unmet Needs**

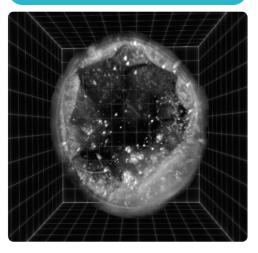
- Label-free imaging is essential for embryo selection processes
- Prohibited to dye or edit genes during embryo selection process
- Current BF microscopy: intra- inter-clinician variability

### Bright field microscope





### **HT-measured mouse embryo**



Unique Technology for Label-Free Selection

→ 3D Label-free Holotomography

### Synergies from strategic partnerships

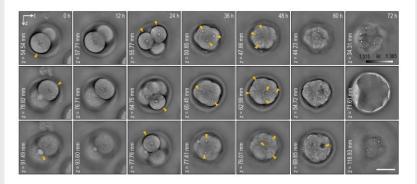
**Ovum selection using HT and Virtual Biomarkers** 

Big hospitals & institutions





# Phototoxicity test for IRB approval using HT-X1 on human fetus studies

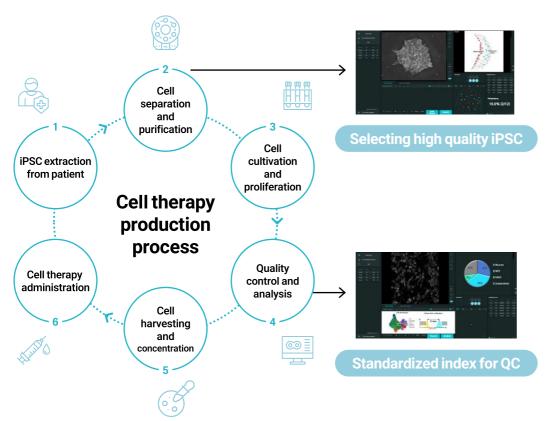


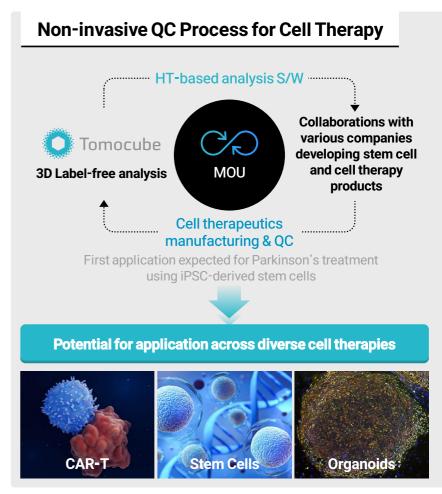
- 3D high-def imaging from G1 phase to blastocyte (72 hours) confirmed
- Al-based embryo selection 95% Accuracy (under review)

# 02. Expanding Applications of HT(3): Cell Therapy

· Transformative Solution for Quality Control in Cell Therapy Manufacturing

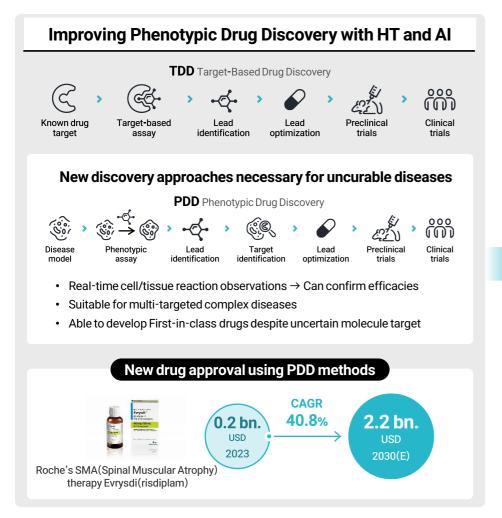
### HT powered analysis S/W allowing Improvements in cell therapeutics manufacturing

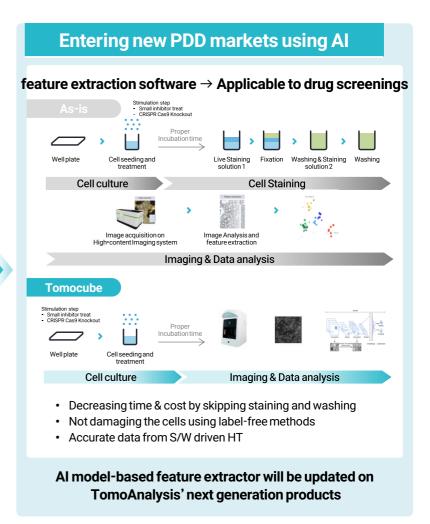




# 02. Expanding Applications of HT(4): Drug Development

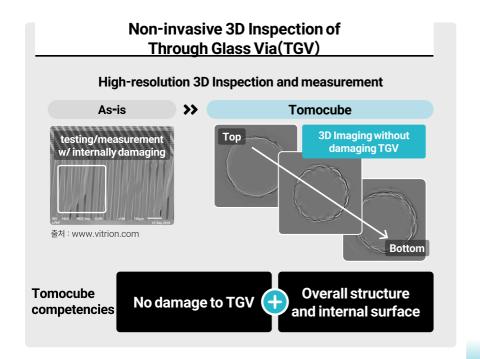
Application of HT in Phenotypic Drug Discovery (PDD)

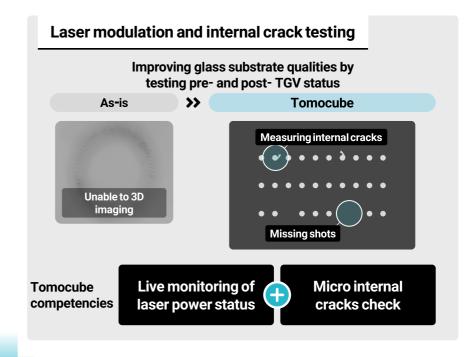




# 02. Expanding Applications of HT(5): Non-Bio Industrial Use

•• Non-Destructive Testing: Key Challenges in Glass Substrate and TGV Manufacturing









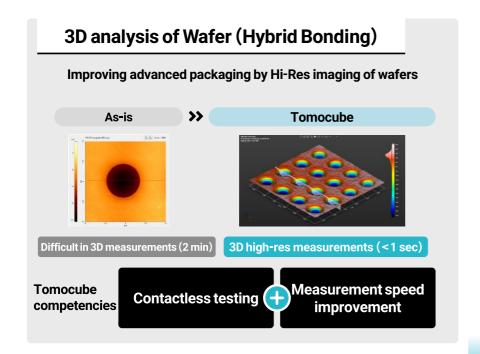


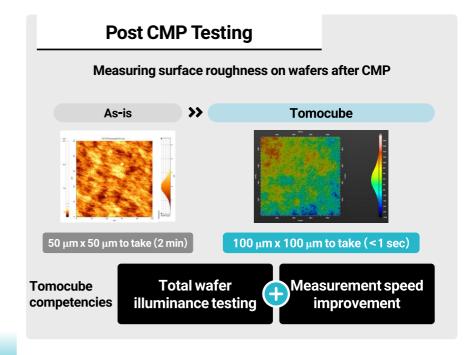




# 02. Expanding Applications of HT(5): Non-Bio Industrial Use

• High-Throughput Metrology: Key Challenges in Hybrid Bonding and CMP Process Control











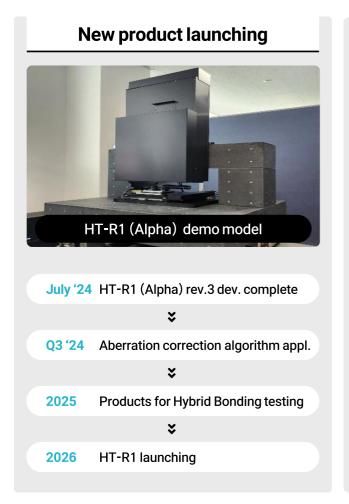


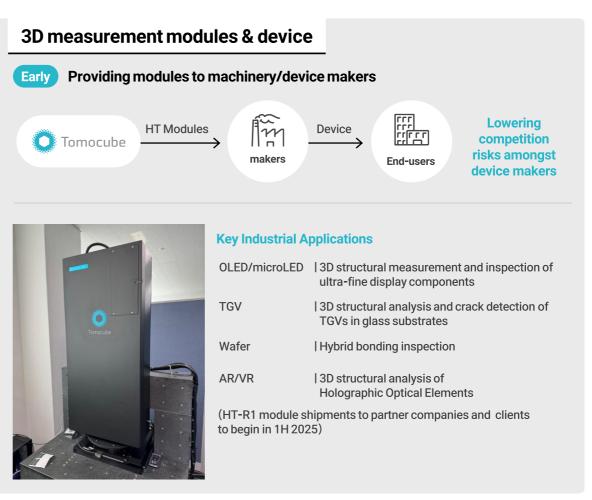
Cost reduction



# 02. Expanding Applications of HT(5): Non-Bio Industrial Use

· · · Continuous R&D enabling the expansions beyond semiconductor and display sectors

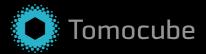




#### Chapter 3.

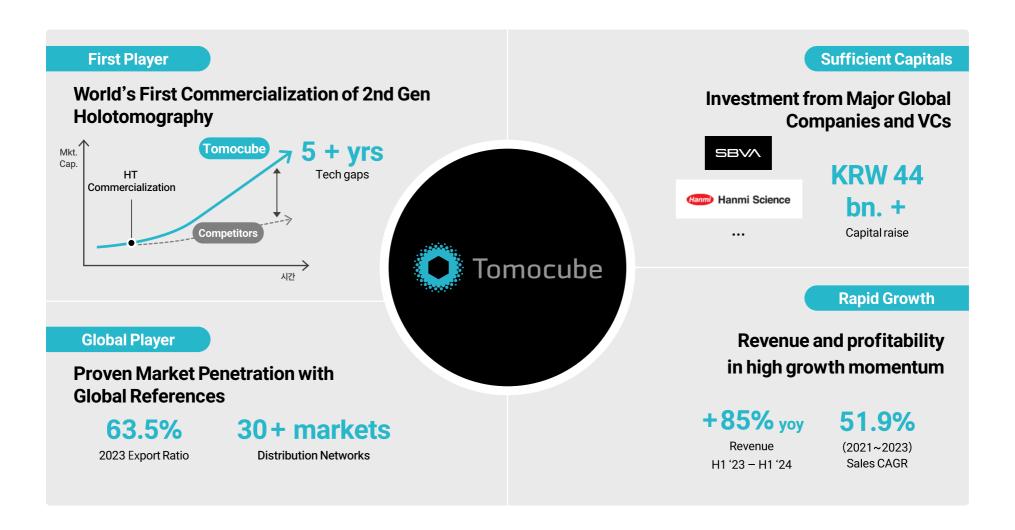
# **Investment Highlights**

- 01. Tomocube's Key Success Factors
- 02. Proven Technology Excellence
- 03. Proven Commercial Viability
- 04. Global Expansion Strategy
- 05. Leading Localization in Bio Equipment Manufacturing
- 06. 1Q25 Financial Highlights



### 01. Tomocube's Success Factors

Advanced Deep Tech Innovator in Bio Industry

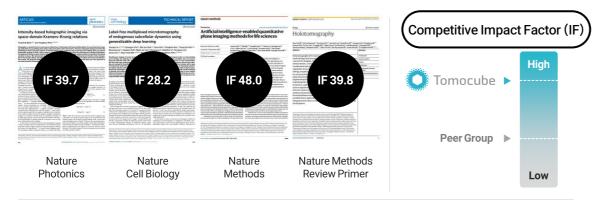


### **02. Proven Technological Excellence**

· · Holotomography Recognition in Global Market

### Tomocube is leading global technology developments

Holotomography featured in top publications by industry



### Cumulated customer references to HT's market position

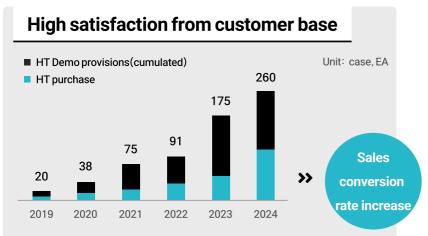
Steady increase in publications w/ Tomocube products Main Research Areas 200+ publications 25 Cancer cell Stem cell Organoid **Driving new customer** acquisition opportunities 2017 2018 2019 2020 2021 2022 2023 2024

# **Major International Collaborations and** Conferences **Bioimaging, Organoids, Major Institutions** (MIT, Harvard, Mayo Clinic, University of Tokyo, Tsinghua University) **Plenary** Session Continuous exposure as the new bio/healthcare technology \* High Interest from Global Biopharma & **Research Institutions**

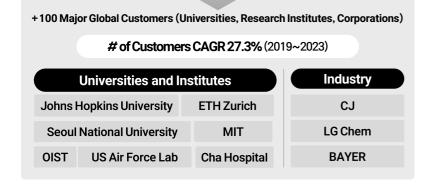
<sup>\*:</sup> Impact Factor - a measure of the frequency with which the average article in a journal has been cited in a particular year. It is used to measure the importance or rank of a journal by calculating the times its articles are cited.

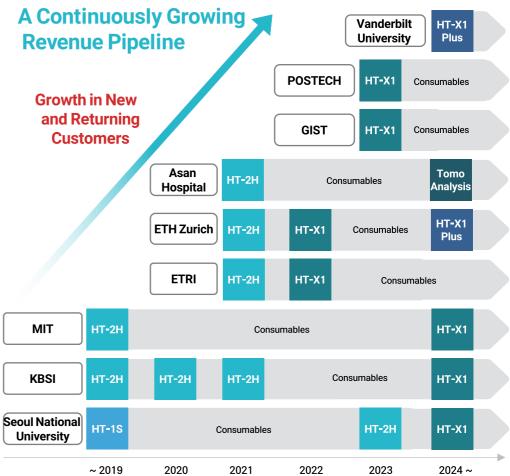
## **03. Proven Commercial Viability**

• HT Expected to Show Explosive Growth as Best-in-Class Technology



More global customer references



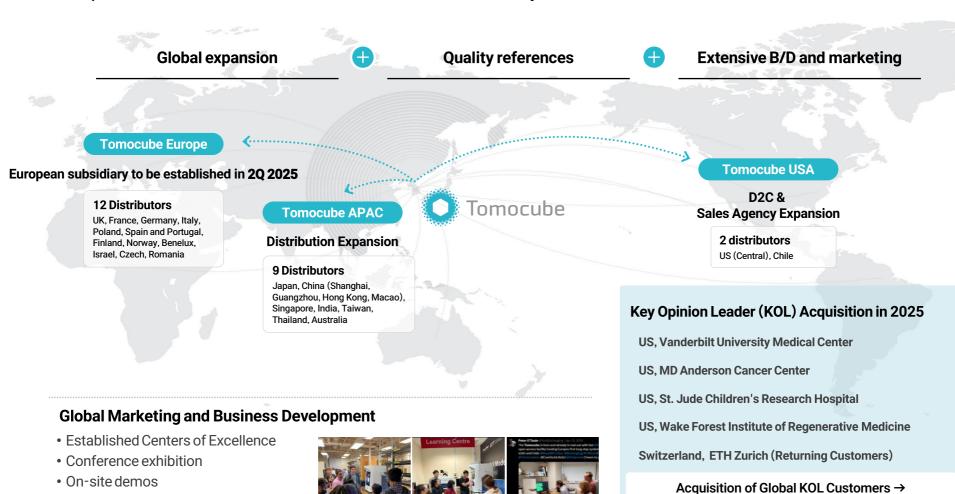


# 04. Global Expansion Strategy

Collaboration with distributors

Social media / online PR

Expansion of Direct Sales & Distribution Networks Globally



**Enhanced Technology and Product Promotion in** 

Academia and Industry

# 05. Leading Localization in Bio Equipment Manufacturing

· Direct Beneficiary of Government's Bio Equipment Localization Policy

KR Government's subsidy on 5% or less for cell analysis equipment and other device dev.

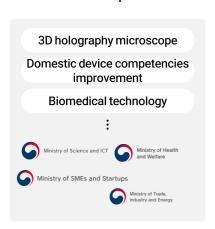


"20% or more to be domestically manufactured by 2027"

World-Class HT Technology

### Tomocube's cumulative public funding history

Over KRW 12.5 bn. public R&D and subsidies since 2015





### Selected for PPS's innovative device purchase



Completed Recognition of KRW 1.39 Billion Revenue for 2024

### 06. 1Q25 Financial Highlights

### · · Summary Income Statement

• 1Q Revenue Recorded at KRW 650 Million (YoY -46.0%, QoQ -35.0%): Revenue declined due to organizational restructuring and transition in distribution strategy. A significant portion of expected Q1 orders was deferred to April.

- Increase in SG&A Expenses Due to Headcount Growth (YoY +6.2%)
- Regional Revenue Breakdown for 1Q25: Korea 6.7%, US 54.4%, Asia 27.3%, Europe 11.5%
- Direct sales through the subsidiary led to a higher revenue contribution from North and Central America.
- A European subsidiary is scheduled to be established and begin direct sales operations in 2Q 25.

Unit: million KRW	1Q 25	1Q 24	YoY (%)	4Q 24	QoQ (%)
Sales	653	1,209	-46.0	1,005	-35.0
Cost of Goods Sold	328	515	<del>-</del> 36.4	359	-8.7
Gross Profit	325	694	<b>-</b> 53.1	646	<del>-</del> 49.7
GPM (%)	49.8	57.4		64.3	
SG&A	3,337	3,141		3,066	
Operating Profit	-3,012	-2,446	23.1	-2,419	24.5
Net Profit (Loss)	-2,786	-2,325	19.8	-2,444	14.0



Notes: Based on audited K-IFRS financial statements

# 06. 1Q25 Financial Highlights

#### Financial Statements

#### Statement of Financial Position

Unit: million KRW

Statement of Financ	Unit: million KRW			
Category	2022	2023	2024	1Q25
Current Assets	22,126	15,952	40,062	36,407
Non-Current Assets	2,930	3,823	3,548	5,716
Total Assets	25,055	19,775	43,610	42,123
Current Liabilities	52,198	1,776	1,328	1,390
Non-Current Liabilities	692	291	292	1,301
Total Liabilities	52,890	2,067	1,620	2,691
Capital Stock	1,100	2,612	6,523	6,523
Capital Surplus	-	66,720	97,882	97,882
Other Capital Items	4,713	5,610	3,069	3,270
Accumulated Other Comprehensive Income	21	-16	36	39
Retained Earnings (Deficit)	(33,668)	(57,218)	(65,520)	(68,283)
Total Equity	(27,834)	17,708	41,990	39,432

Notes: Based on audited K-IFRS financial statements.

### **Income Statement**

Unit: million KRW

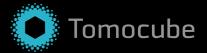
Category	2022	2023	2024	1Q25
Sales	1,871	3,747	5,939	653
Cost of Goods Sold	928	1,565	2,349	328
Gross Profit	943	2,182	3,590	325
Selling & Admin Expenses	7,311	8,915	12,370	3,337
Operating Profit	(6,369)	(6,733)	(8,780)	(3,012)
Financial Gains (Losses)	35,579	(16,889)	300	(205)
Other Gains (Losses)	126	71	177	19
Profit (Loss) Before Tax	29,336	(23,550)	(8,302)	(2,786)
Income Tax Expense	_	-	-	-
Net Profit (Loss)	29,336	(23,550)	(8,302)	(2,786)

Notes: Based on audited K-IFRS financial statements.

# Appendix

01. Board of Directors

02. Key Personnel



Appendix Tomocube, Inc. 137

### 01. Board of Directors

• Independent, professional board with a focus on accountability



YongKeun Park Chairman of the Board, CEO

Education Ph.D. in Health Science and Technology, Harvard-MIT

Career
 Co-founder & CEO, Tomocube

· Professor, KAIST



Sang-II Park Outside Director

Education Ph.D., Stanford University

Career
 CEO, Park Systems

· Founder & CEO, Park Scientific Instrument



**Byung-Kyun Ham Outside Director** 

Education J.D., Seton Hall University School of Law

• Dentons Lee Senior Attorney

· Law Firm Jipyeong Senior Foreign Lawyer

· General Counsel, Seegene

 attorney for the U.S. Department of Health and Human Services



### Sang-Hoon Cha Outside Director

Education Ph.D., Seoul National University, Medicine

Career • Multipurpose Synchrotron Radiation Construction Project Committee

· Central Pharmaceutical Affairs Council

 Professor, Department of Medicine, Chungbuk National University College of Medicine

· President, Osong Foundation for Advanced Medical Industry

· President, Korea Drug Development Fund



Sung-Ho Ko Inside Director, COO

Education M.S. in Industrial Engineering, KAIST

Career

· General Manager, Lutronic

· Country Manager, Samsung Medison



### Young-seok Shin Auditor

Education M.S., Beijing University, MBA

Career

CFO, ASTech Co., Ltd.

· Director, Samjong KPMG LLC

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### **02. Senior Executives**

•• More than 10 years of experienced management and development personnel in the relevant field



YongKeun Park **CEO** 

Education Ph.D. in Health Science and Technology, Harvard-MIT

Career

• Co-founder & CEO, Tomocube

· Professor, KAIST



Sung-Ho Ko coo

Education Career

M.S. in Industrial Engineering, KAIST

· General Manager, Lutronic

· Country Manager, Samsung Medison

· Quality Control, Daewoo Electronics



Taehong Kim SVP of Precision Division

**Education Career** 

B.S. in Electrical and Electronic Engineering, KAIST

· Software Team Lead, Wiseplanet

· Software Engineer, Photon Dynamics Korea

· Acron, S/W team



**Jaapil Do Technology Development Department** 

Education Career

Ph.D. in BioMEMS, University of Cincinnati

CTO & CSO, CytoDyx

• Team Lead, Diagnostic Device Develoment,i-SENS

· Research Planning, Samsung Seoul Hospital

· Samsung Advanced Institute of Technology, Bio Lab

· Researcher, Boston University



Sumin Lee SVP of Life Science Division

Education Career

Ph.D. in Life Sciences, POSTECH

• R&D Project Planning, National Forensic Service

· Postdoctoral Researcher, POSTECH



Wan-Sung Ku cFo&cso

Education Career

Ph.D. (ABD) in Pharmacy, Sungkyunkwan University

CFO, Geninus

· Analyst, NH Investment & Securities

· Research Planning, Dong-A Socio Holdings

