Venture Café Tokyo 3/6
Thursday Gathering @Niji

Tech Startup HOKURIKU (TeSH)

Monday, March 24, 2025
UCHIDA Fumihiko
Program Head of Directors, Tech Startup HOKURIKU/
Director, Startup Promotion Office,
Headquarters for Promotion of Future Innovation, JAIST

Background

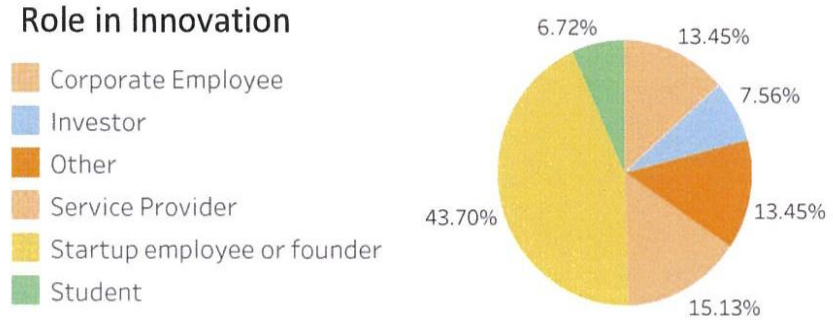
2014
Hitachi→Univ. of Tsukuba

Aug. 2019: Venture Café “University of Tsukuba night”

The Role of Academia in Innovation

Ms. Hirata booked Venture Café for August 29 on the spot!

Timothy Rowe
CEO, Cambridge Innovation Center



Participants: 343
of which 29% were women and
27% were first-time participants

2023
→ **JAIST**
Program Head of Directors

FY2026 Venture Café “HOKURIKU Startup night”

We are preparing for the event.

Background

Government “Startup Development Five-year Plan” Nov. 2022

～Increase investment in startups 10 times by FY2027 100 unicorns and 100,000 startups～

New Industry Creation Fund for University Startups (2023-2027) **Supplementary budget (98.8 billion yen)**

- ①Deep Tech Startup International Development Program（D-Global)
- ② Startup Ecosystem Co-creation program (Aug. 29, 2023, Open call ）

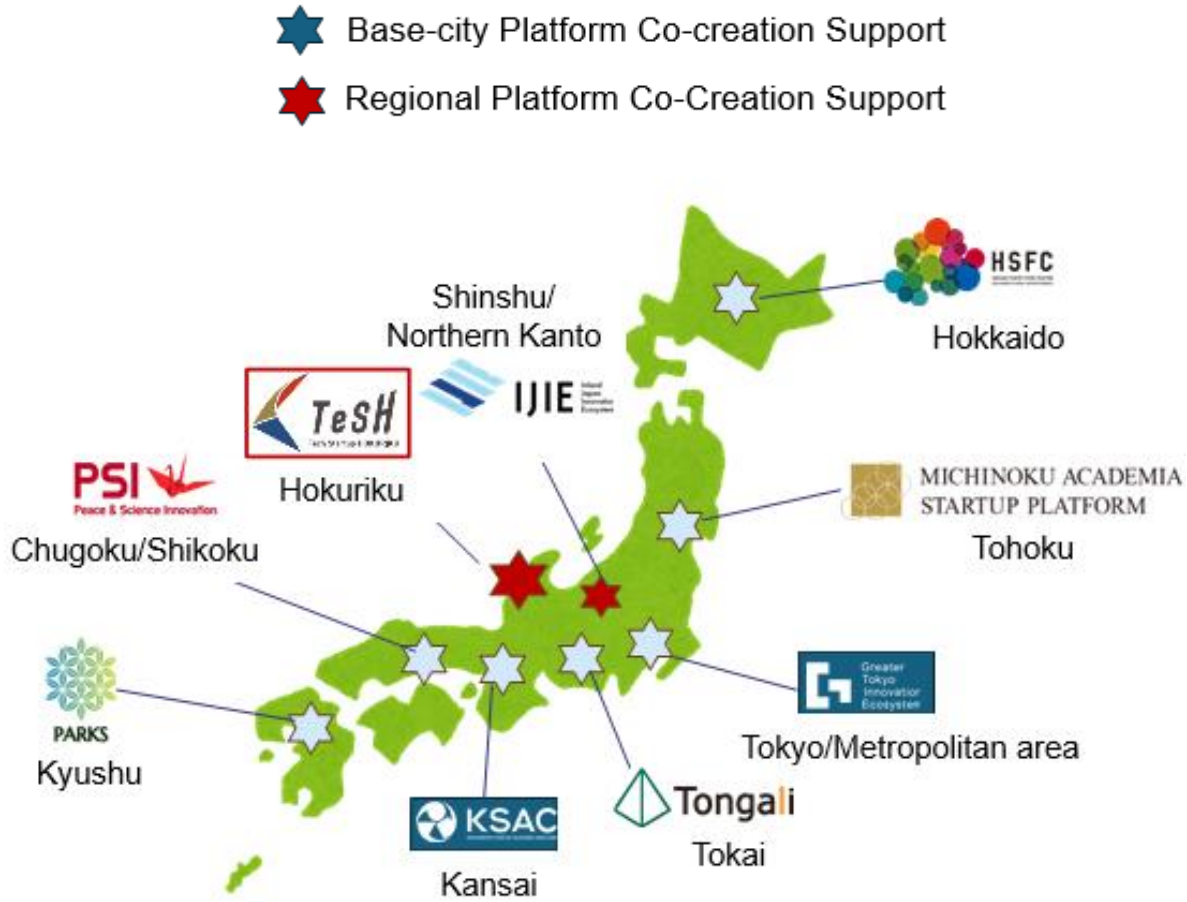
Base-city Platform Co-creation Support

Regional Platform Co-Creation Support

Universities and technical colleges in the Hokuriku unite to propose

Tech Startup HOKURIKU(TeSH)

Selection Reasons	・Collaboration in Hokuriku ・Application addresses startup creation challenges



9 platforms adopted by the Startup Ecosystem Co-Creation Program (From Feb. 1, 2023)

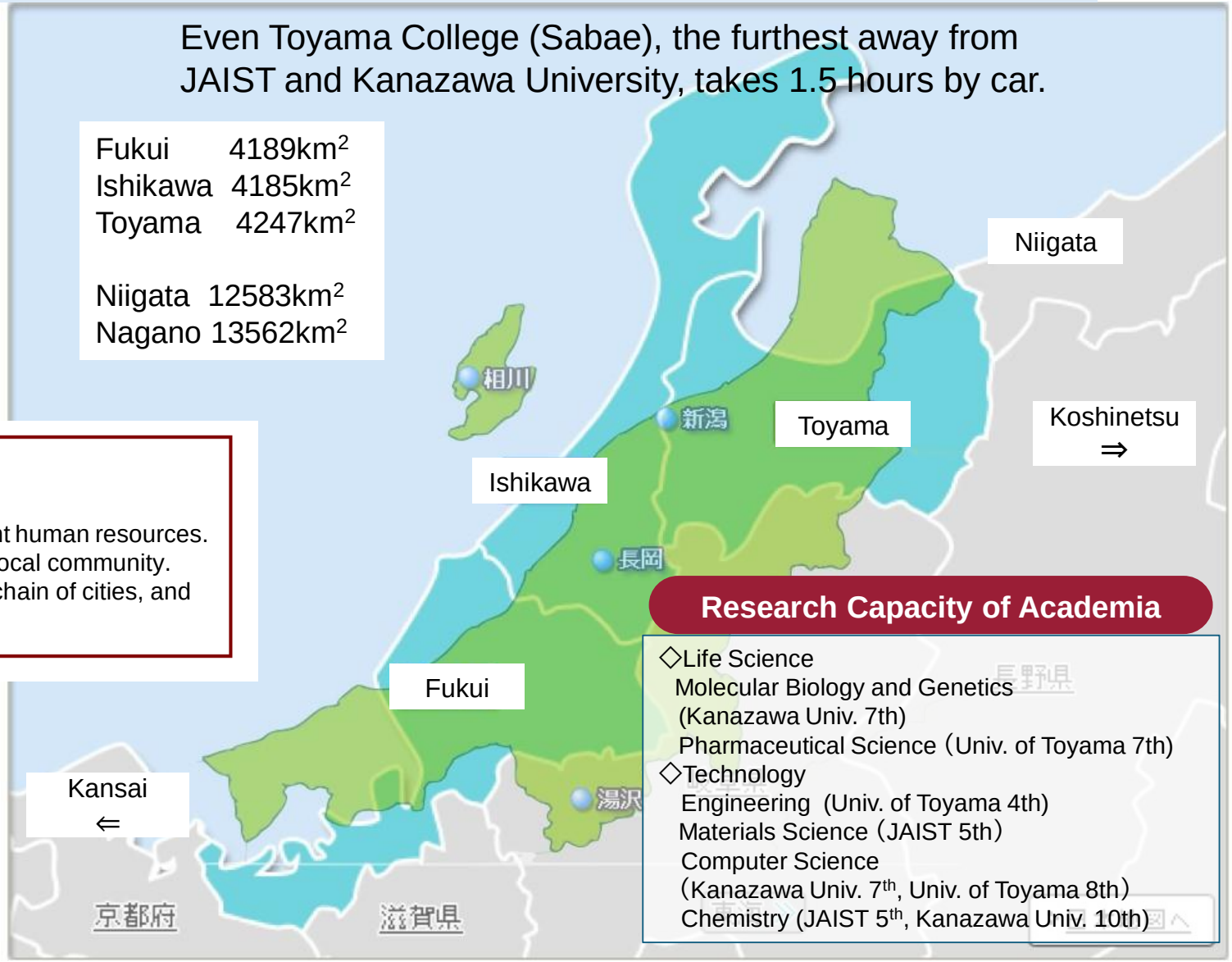
Potential of Hokuriku

Covering roughly the same size area as Niigata and Nagano. Hokuriku industrial region, which includes Niigata, has the seventh largest industrial shipments and top economic prosperity and well-being in Japan.

Even Toyama College (Sabae), the furthest away from JAIST and Kanazawa University, takes 1.5 hours by car.

Fukui 4189km^2
Ishikawa 4185km^2
Toyama 4247km^2

Niigata 12583km^2
Nagano 13562km^2



■Perspectives for developing a "Hokuriku-style"

- The Hokuriku region offers a comfortable living environment.
- It has a high enrollment rate, women's social advancement, and abundant human resources.
- A high proportion of manufacturing industries build connections with the local community.
- Its great location includes proximity to three major metropolitan areas, a chain of cities, and easy access to East Asia.

Disposable Income Ranking (March 2021 MLIT)

All households		
Disposable Income		
1	Toyama	464,635
2	Fukui	449,794
22	Ishikawa	404,475

Happiness Report 2024 (Japan Research Institute)

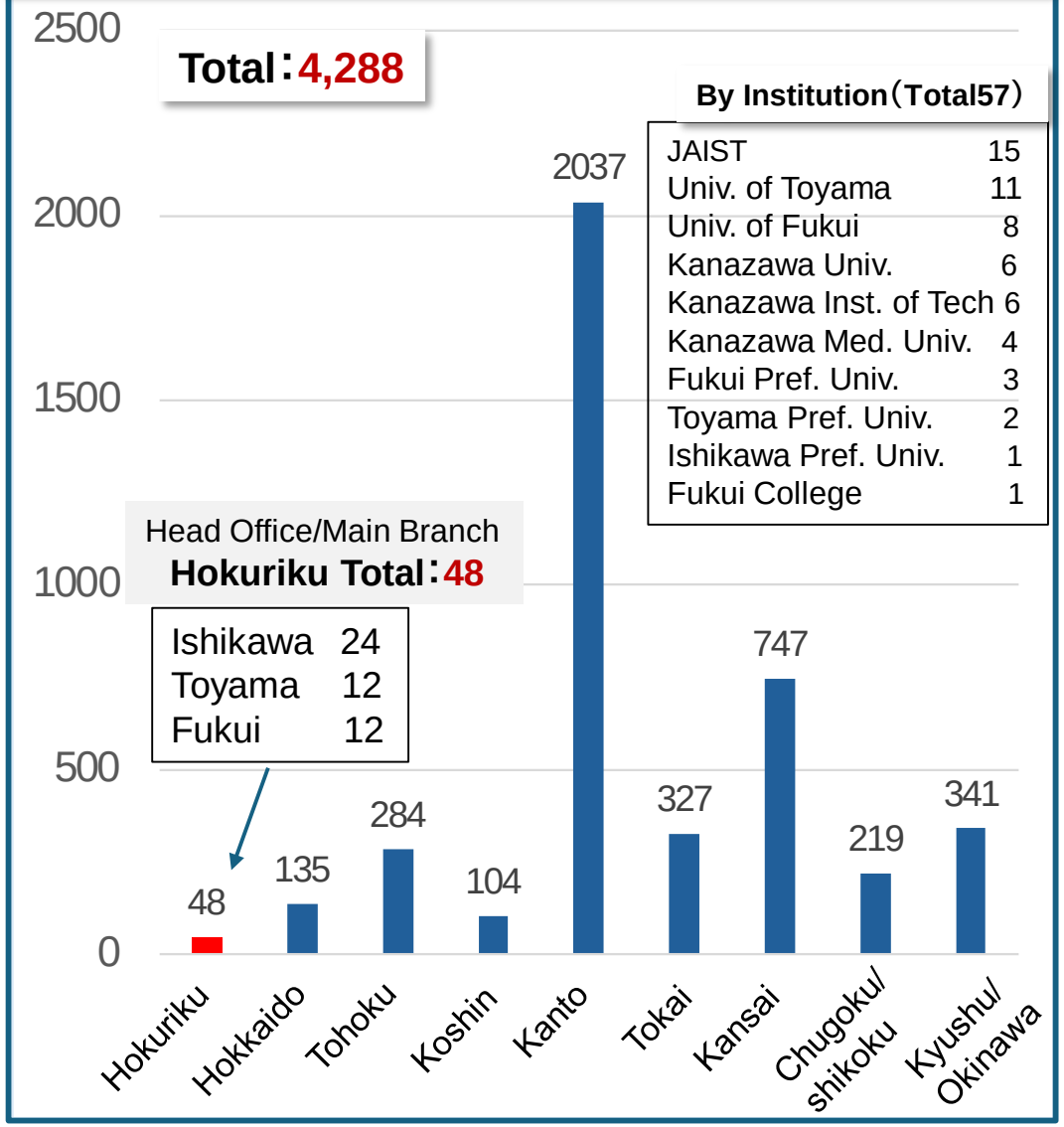
1st: Fukui
2nd: Yamagata
3rd: Toyama

Research Capacity of Academia

◇Life Science
Molecular Biology and Genetics
(Kanazawa Univ. 7th)
Pharmaceutical Science (Univ. of Toyama 7th)
◇Technology
Engineering (Univ. of Toyama 4th)
Materials Science (JAIST 5th)
Computer Science
(Kanazawa Univ. 7th, Univ. of Toyama 8th)
Chemistry (JAIST 5th, Kanazawa Univ. 10th)

Startups in Hokuriku Academia and Start of TeSH

Survey on university startups by METI (2024.5)



February 2024
A platform for startups from universities and technical colleges in Hokuriku

Tech Startup HOKURIKU (TeSH) Start

Academia will shift its focus to nurturing SUs, dramatically improving the quality and quantity of university and technical college SUs.

Foster listed companies and new industries based in Hokuriku and create new products and services that will take on the world.

Attract new demand for human resources and capital investment, revitalize the region, and contribute to solving social issues in the Hokuriku.

Implementation Structure

Primary Institutions

JAIST

TERANO Minoru
President

Program Representatives

Startup Promotion Office
(Launched on April 1st)

UCHIDA Fumihiko
Specially Appointed Prof.
(Director of Startup Promotion Office)

Program Head of Directors

NAKADA, Yasuko
Associate Prof.

Program Co-Director

Base Startup Coordinator

- Full-Time URA (2 people)
- Researcher (1 person)
- Dispatched from Local Govt., Support Orgs, Financial Institutions
- Manager
- STAFF (1 person)

TeSH Office

Work Together
(Confirmation of accounting details, etc.)

- Innovation support section
- Research promotion section

Kanazawa University

WADA Takashi
President

NAKAMURA Shinich
Trustee
(Research Support)

YASUKAWA, Naoki
Prof.

Startup Coordinator

Online
Collab. System
Collab. Activities
Base Setup
HR Development
Course Operation

- Full-Time URA (1 person)
- Concurrent Post URA (2 people)
- Researcher (1 person)

Work Together

- Frontier science and social co-creation initiative
- Innovation airport
- Industry-Univ. collaboration support division

Joint Institutions for Creating Startups

Univ. of Toyama
Toyama Prefectural Univ.
Toyama College

Ishikawa Prefectural Univ.
Komatsu Univ.
Kanazawa College of Art
(From Dec. 2024)
Kanazawa Institute of Tech
Kanazawa Medical Univ.
Hokuriku Univ.
Ishikawa College

Univ. of Fukui
Fukui Prefectural Univ.
Fukui Univ. of Tech
Fukui College

**13 Universities &
3Technical Colleges**

**4 National Universities
5 Public Universities
4 Private Universities
3 Technical Colleges**

Platform Steering Committee

Chairperson：JAIST, Kanazawa Univ.
- Primary Institutions：Program Representatives, Program Head of Directors, Program Co-Director
- Joint Institutions：General manager, Program Co-Director
- Startup Promotion Office：TeSH Office

- SU Creation Program Selection Committee
- Seeds Discovery Subcommittee
- Environment Improvement Subcommittee
- Intellectual Property Strategy Subcommittee

JAIST : GAP Fund
Kanazawa Univ. : Environment & Intellectual Property

Expanded Team TeSH：67 Organizations
(As of March 6, 2025)

Cooperative Organizations — 41 Organizations

Blue: New in FY 2024

Prefecture, Municipality, etc.

Toyama Prefectural Govt.
Ishikawa Prefectural Govt.
Fukui Prefectural Govt.
Toyama New Industry Organization
ISICO
Fukui Industrial Support Center
Kaga City

Economic Organization

Hokuriku Economic Federation
SME SUPPORT JAPAN
Chubu Bureau of Economy, Trade and Industry
Chubu Bureau of Economy, Trade and Industry-Electricity and Gas Business Hokuriku Branch
Hokuriku Industrial Advancement Center

Finance

HOKURIKU BANK
BANK of Toyama
First Bank of Toyama
DBJ Hokuriku Branch
Fukui Bank
Sumitomo Mitsui Trust Bank
SMBC
SMBC Venture Capital
JP Bank

Private Company — 1⇒16 organizations

NIHONKAI Lab.
KDDI
Asian Bridge
HOKURYO DENKO
BEING HOLDINGS
I-O DATA
ACTREE
HOKUDEN Business Investment
MEDIPAL HOLDINGS
KIYOKAWA Plating Industry
TATEYAMA KAGAKU
NICCA CHEMICAL
Sugino Machine
KEC
SHIBUYA CORPORATION
Relic

Other

JETRO Kanazawa
JETRO Toyama
JETRO Fukui
Mitsubishi Research Institute

Commercialization Promotion Organizations — 26 Organizations

Blue: New in FY 2024

VC, Kanazawa University

Vision Incubate

VC,CVC, Hokuriku

Hokuhoku Financial Group
Fukui C&C
QR INVESTMENT
Carbon Ventures
HED

Private Accelerator

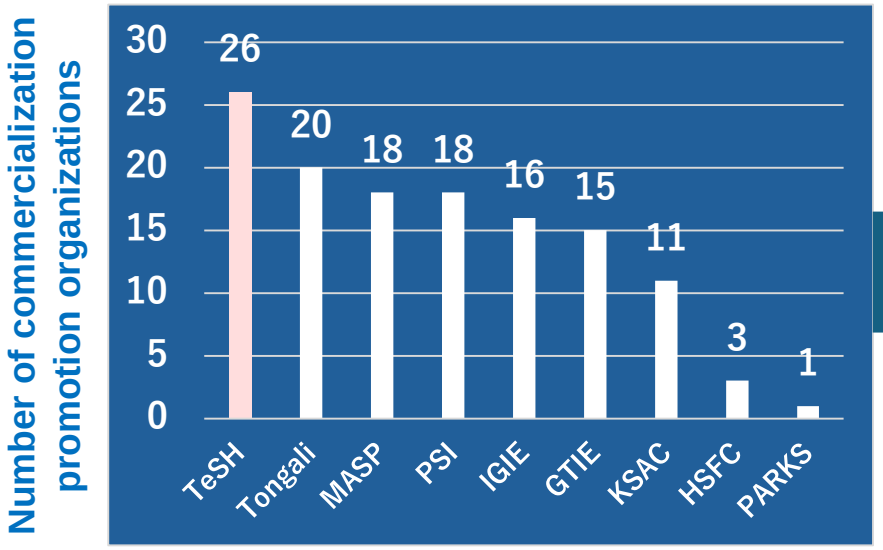
RICH
Sojitz Institute of Innovations Technologies

VC, Outside of Hokuriku — 9⇒26 organizations

KSP
U TOKYO IPC
INCUBATE FUND
Beyond Next Ventures
JAFCO
ANRI
SAMURAI INCUBATE
Fast Track Initiative
QB Capital
Bio-Sight Capital
DEFTA Capital
MIRAISOZO INVESTMENT
Mitsubishi UFJ Capital
HACK VENTURES
AN Ventures
UntroD Capital Japan
SBI Investment
Quantum Leaps Ventures

Nov. 13th, 2024, Matching Session in Kanazawa

Largest number of commercialization promotion organizations among the 9 PFs (number published on website)



TeSH GAP Fund Premium Session 2024

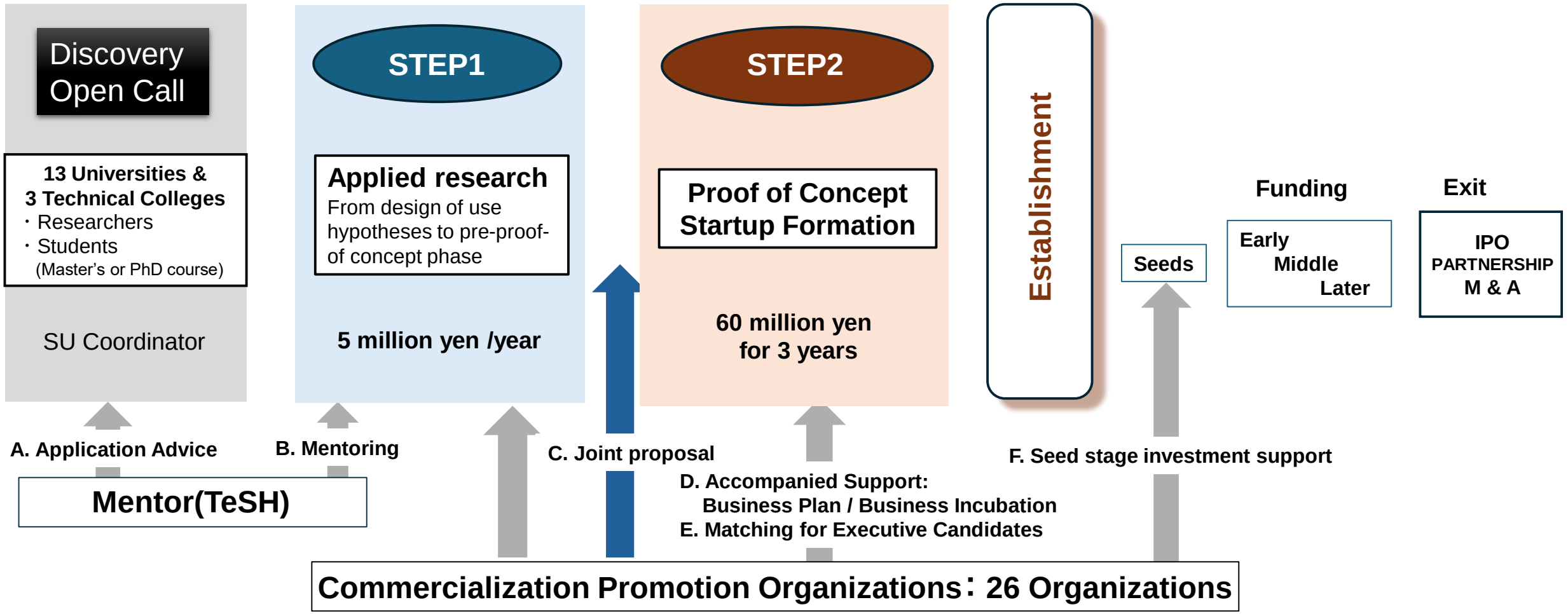
TeSH creates opportunity for venture capitalists to focus on HOKURIKU

34 Venture Capitalists

Adopted 21 Themes for TeSH STEP 1

TeSH GAP Fund

1 GAP Fund Support



2 Support for startup support personnel

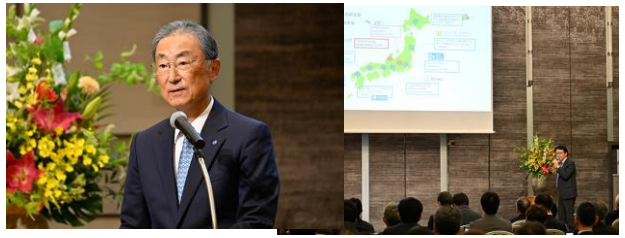
TeSH FY2024

FY2023 | **FY2024** | **FY2025**

2024/2/1
Start of program

2/28
1st Program Steering Committee Meeting

Kick-off Symposium (May 8)



DEMO DAY(November 3)

3/24
National Platform Community Event

FY2024 STEP1
- 2/29 Application Period
- 4/26 Adoption
- 7/12 21
- 3/10 Final Debriefing

FY2024 STEP2
- 9/10 Application Period
- 10/10
- 12/28 Adoption 4

FY2025 STEP1
- 1/7 Application Period
- June- Adoption

FY2025 STEP2
- 1/31 Application Period
- 2/28
- June- Adoption

FY2024 TeSH GAP Fund Program Achievements

Step1 In the first year, **61** seeds were discovered from Hokuriku academia. From **48** applications, 1.6 times the expected number, **21** were adopted.

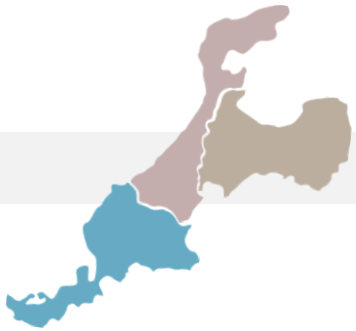
Discovered Seeds	Application	Adoption
61	48	21
Life Science 22	19	9
Tech 19	14	8
Environment 10	7	3
Others* 10	8	1

Mentoring → Screening

*Others
Regional(Tourism, Transportation, etc.)
Disaster resilience
Arts, Education, Social science, etc.

21 adopted research themes video available on the TeSH website

https://tech-startup-hokuriku.jp/news/2024/2024_07_12.html



Step2 From **11** entries, **4** were adopted.

Discovered Seeds	Application	Adoption
11	6	4
Life Science 5	5	3
Tech 4	1	1
Environment 2		0

Mentoring → Screening

Adopted Research Themes for FY2024 STEP1,STEP

■STEP1：21 themes (announced July 12)　5 million yen/ year

Global Market　Address Regional Issue

＜ Life Science: 9 ＞

T1	JAIST	Commercialization of innovative nanoparticles for treating posterior ocular diseases through eye drops
T2	Kanazawa Univ.	Development of Digital Therapeutics for Eating Disorder
T3	Univ. of Toyama	Practical application of simple and high-performance cell sorting device
T4	Univ. of Toyama	Development of novel drugs based on the exacerbation molecular mechanism for the rare diseases that are no effective treatment
T5	Univ. of Fukui	Development of Therapeutic Agents for Retinal Ischemic Disease
T6	Fukui Prefectural Univ.	Oral administration of biopharmaceuticals via gastrointestinal absorption using abacterial polycationic peptides
T7	Kanazawa Medical Univ.	Business Development for Various Organ Cell Panels as Alternatives to Animal Testing, Combining Cellular Technology and Microphysiological Systems (MPS)
T8	Kanazawa Medical Univ.	Development and Commercialization of a Device for Mammalian Sperm Activation Using Specific Wavelength Light Irradiation
T9	Kanazawa Medical Univ.	Feasibility Study for the Commercialization of a Tissue Clearing Kit for Biological Specimens

＜ Technology, Environment, Others, : 12 ＞

T10	JAIST	Business development of a harvesting robot arm and harvesting motion system mounted with a soft robotic hand
T11	JAIST	Business Investigation on a Safe and Efficiently Operable Drone with Tombo Propeller
T12	JAIST	Toward a World Free from Oxidative Degradation of Plastics — Discovering Synergistic Stabilizer Formulations through Ultra-Efficient Screening
T13	Kanazawa Univ.	Power supply capable of stable operation under extreme space environments
T14	Kanazawa Univ.	Creation of Space Semiconductor Business Using World's First Inversion-Layer Diamond MOSFET
T15	Kanazawa Univ.	Development of safe and eco-friendly chemical remediation methods for heavy metal-contaminated soils
T16	Univ. of Toyama	Biorefinery project utilizing high-performance fermenting fungi for second-generation biomass
T17	Toyama Prefectural Univ.	Developing a business model for nanoneedle patches
T18	Toyama Prefectural Univ.	AI Front Sensing Business
T19	Fukui Prefectural Univ.	Practical research plan for the hatchry-based aquaculture of mackerel (Project Name: SABAival PROJECT)
T20	Kanazawa Institute of Tech.	VTOL-type winged electric drone business with maximum payload of 50 kg and range of over 50 km
T21	Fukui College	Smart Support System for Children with Special Needs and All Related Stakeholders

■ STEP2：4 themes (announced December 13）　60 million yen for 3 years

＜ Life Science: 3 ＞

JAIST	QB Capital LLC	Transcendent Bacterial Cancer Therapy
Kanazawa Univ.	DEFTA Capital Inc.	Platform validation of drug discovery and diagnostics based on Ab-epitope profiling technologies in allergic diseases
Kanazawa Univ.	Vision Incubate Co., Ltd.	Establishment of large-scale production and quality control technologies for high-quality exosome formulations

＜ Technology, Environment, Others, : 1 ＞

Kanazawa Univ.	Vision Incubate Co., Ltd.	Realization of next-generation film solar cell with low cost, long life, and high efficiency for GX Innovation

TeSH Hokuriku Region Contribution
Potential Startups ①

Hatchery-based aquaculture of mackerel and create new market for fish farming

FY2024 STEP1

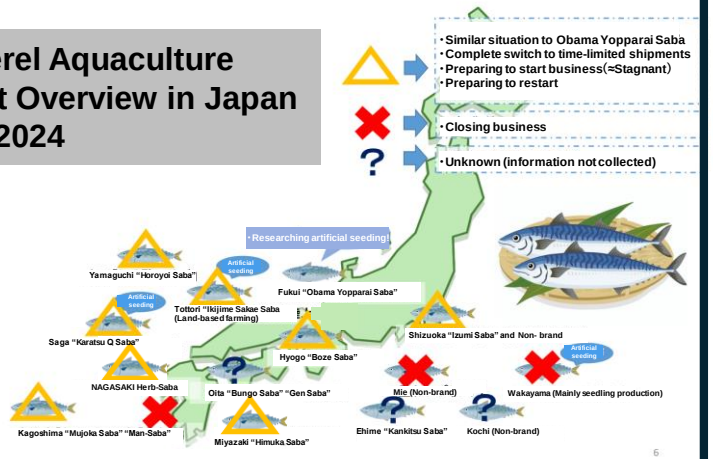
SABAival PROJECT

Fukui Prefectural University

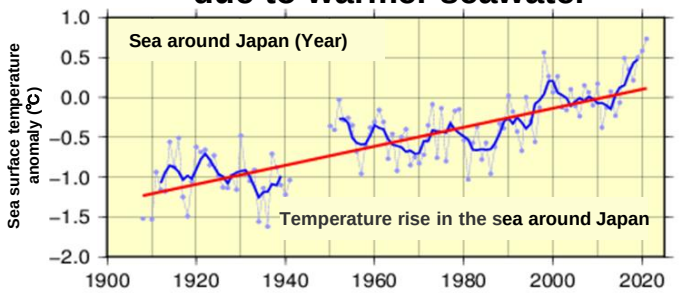
Problem

Mackerel aquaculture endangered in Japan

Mackerel Aquaculture Market Overview in Japan As of 2024



【Factor 1】Massive mackerel mortality due to warmer seawater



【Factor 2】Shortage of mackerel seeds due to poor catch

Achievements in Obama city

From 2016

Obama City, Fukui "SABAival" project

Faculty of Marine Science and Technology, Fukui Prefectural University
Fukui Fisheries Promotion Center
Tagarasu Suisan

Research achievements in hatchery-based aquaculture through industry-academia-government collaboration

2019-2023 **"Obama Yopparai Saba" Business development in fish fattening**

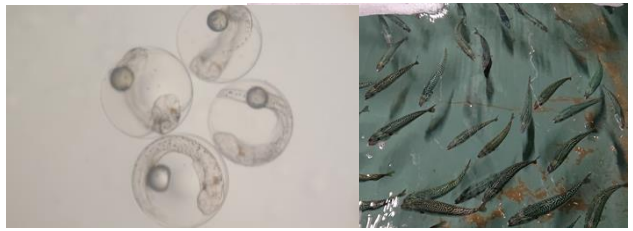
2020 **Successful production of approximately 10,000 artificial seed**

2023 **Test sales of hatcher-based aquaculture of mackerel achieved!**

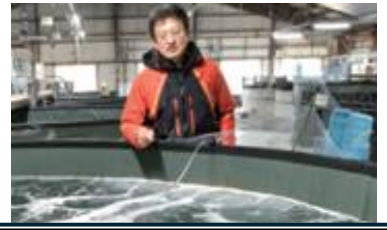
Results of STEP1

Hatching rate of fertilized egg

25%⇒75%



Challenges through startup



Prof. **Daisuke TAHARA**
Department of Advanced Aquaculture Science
Faculty of Marine Science and Technology,
Fukui Prefectural University

Core technology -Creation of the strongest Hybrid seeds-

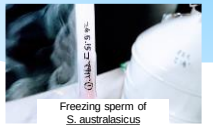
Scomber japonicus ✖ **Scomber australasicus**

Patent Application Scheduled

- Taste of S. japonicus & High temperature tolerance of S. australasicus
- No risk of ecological impact
- Not started in fish farming⇒High novelty

Comprehensive hatchery-based Aquaculture of mackerel system

Seeding
Feed
Environment



Freezing sperm of S. australasicus

Eggs of S. japonicus

Business Goals

Domestic mackerel artificial seed market ⇒12 billion yen

Global edible mackerel market ⇒ approx. 200 billion yen

TeSH Hokuriku Region Contribution
Potential Startups ①

VTOL-type winged electric drone business with maximum payload of 50 kg and range of over 50 km

FY2024 STEP1

Noto Peninsula earthquake is the start of the project

KIT 金沢工業大学

Problem

・Customer: Transporters of materials and supplies in harsh environments such as mountainous and depopulated areas

- **Power line construction and maintenance:** Electric Power Company, Power Distribution Company, Power line maintenance company, etc.
- **Transportation of supplies to mountain huts:** Mountain hut operator, etc.
- **Disaster and Humanitarian Aid, Disaster Prevention and Defense:** Government Contractors, etc.

・Customer Issues: Labor shortage, high costs, safety risks

✓Shortage of transport workers(Declining population, changing work styles, and tendency to avoid physical labor)

✓High cost of helicopter transport (Rising fuel costs, etc., Human-powered transportation to arrival and departure sites)

Difficulty securing land for loading (Not nearby due to the high cost of installation. Cost increase due to necessary coordination with landowners)

High dependence on those with transportation (Difficult to negotiate the amount of goods that can be transported and the delivery date, etc. on equal terms.)

✓Significant risk, including fatalities (Risk of slipping and heat stroke at work)

Results of STEP1

March 2025: Unit1(50 Kg lifted)

Prof. **AKASAKA Takeshi**
College of Engineering,
Kanazawa Institute of Technology

Challenges through startup

- **VTOL-type winged electric drone "Drone 50/50"**

◎ **Maximum payload of 50 kg and range of over 50 km**

→Travel short distances multiple times without charging

→Long-distance, heavy-cargo drones are rare

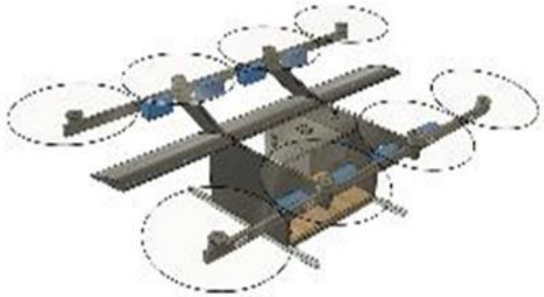
○ **Vertical take-off and landing**

→OK on uneven ground and in parking lots

○ **Electric**

→Easy to handle

・To the global drone market



Drone 50/50 (image)

Adopted Research Themes for FY2024 STEP2

Transcendent Bacterial Cancer Therapy

FY2024 STEP2

Life Science

Commercialization Promotion Organization QB Capital LLC

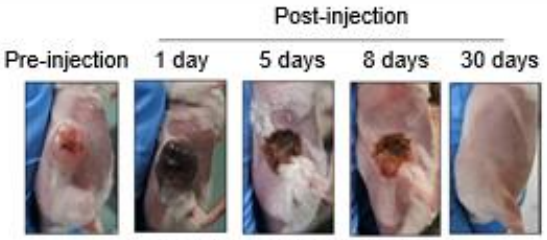
Principal Investigator JAIST Professor MIYAKO, Eijiro

- **Successfully isolated potent antitumour bacteria, named A-gyo, UN-gyo, and AUN, from tumour biopsies**
- **AUN composed of Proteus mirabilis (A-gyo) and Rhodopseudomonas palustris (UN-gyo) expresses high biocompatibility and strong tumour suppression ability**

The image is that AUN composed of *Proteus mirabilis* (A-gyo) and *Rhodopseudomonas palustris* (UN-gyo) are defeating cancer cells by good chemistry.

Safety assessments (hematological and histological) suggest
High Biocompatibility of AUN

Published in top science journal Advanced Science (IF2022=15.1) and press release from JAIST. Highlighted in many national and international media (Nikkan Kogyo Shimbun, Tokyo Shimbun, Hokkoku Shimbun, Yahoo, EurekAlert, Alpha Galileo, etc.)



Antitumour efficacy of AUN
(Tumours are eliminated by a single administration)

Prof. MIYAKO, Eijiro

【PATENT】
- Relating to cancer diagnosis and treatment technologies using bacteria and near-infrared-light (Entering the national phase)
- Relating to intratumoral bacteria 1 (PCT application filed)
- Relating to intratumoral bacteria 2 (PCT application filed)
- Formulation related technologies(PCT application planned)

Expected establishment date: FY 2027

Target market: Global, Domestic

Platform validation of drug discovery and diagnostics based on Ab-epitope profiling technologies in allergic diseases

FY2024 STEP2

Life Science

金沢大学 KANAZAWA UNIVERSITY

Commercialization Promotion Organization DEFTA Capital Inc.

Principal Investigator Kanazawa University Professor WATANABE, Yoshihiro

Market Size

Global Market Size for Diagnosis and Treatment of Food Allergy
→ $13.5 billion (2030)

Market Size for Diagnostic Kits and Immune Tolerance Inducing Drugs
→ $680 million

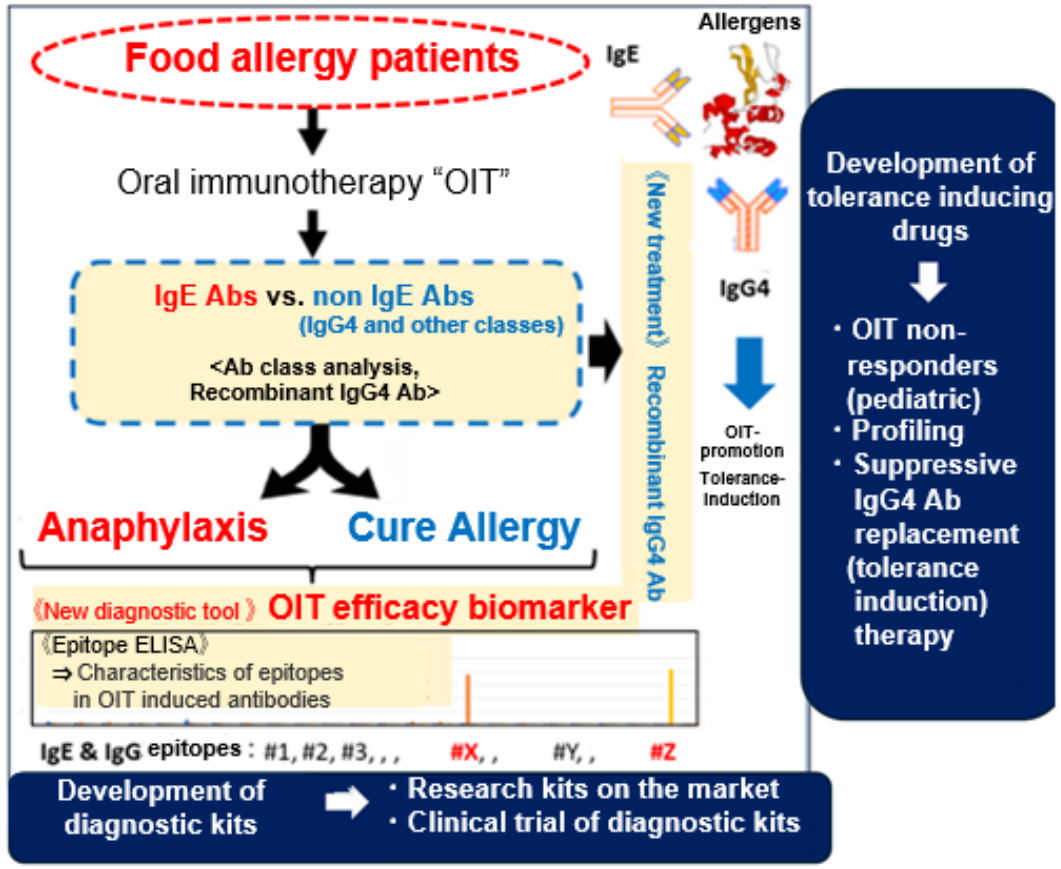
Achievements and Development policy

Ab-epitope Profiling

- Allergic diseases
- Infectious disease (Virus/Bacteria, etc.)
- Autoimmune and other disease

"Pathogenic epitope"
"Antibody tolerance inducing epitope"
Identify antibody targets and select candidate IgG4 antibodies

Development of diagnostic kits and tolerance inducing drugs



Development of tolerance inducing drugs

- OIT non-responders (pediatric)
- Profiling
- Suppressive IgG4 Ab replacement (tolerance induction) therapy

Expected establishment date: FY 2027

Target market: Global, Domestic

Establishment of large-scale production and quality control technologies for high-quality exosome formulations

FY2024 STEP2

Life Science

金沢大学 KANAZAWA UNIVERSITY

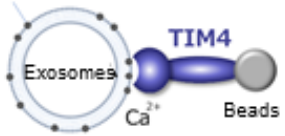
Commercialization Promotion Organization Vision Incubate Co., Ltd.

Principal Investigator Kanazawa University Professor HANAYAMA, Rikinari

Exosomes are vesicles 50-100 nm in diameter secreted by cells. They transfer proteins, DNA, and RNA, and therapeutic approaches utilizing exosomes are being developed.

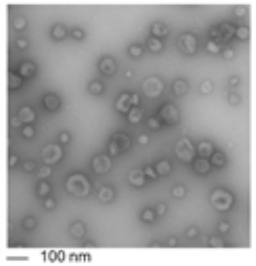
Prospect	Development of innovative preventive and therapeutic approaches in various medical fields such as cancer, immune, infectious, neurological, cardiovascular, endocrine diseases, regenerative medicine, etc.
Problem	Insufficient guidelines and lack of standard protocols by regulatory authorities in each country for production methods, quality control, safety assessment, etc.

Phosphatidylserine (PS)

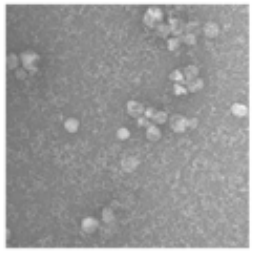


10 times higher purity and 100 times more sensitive

Tim4 method



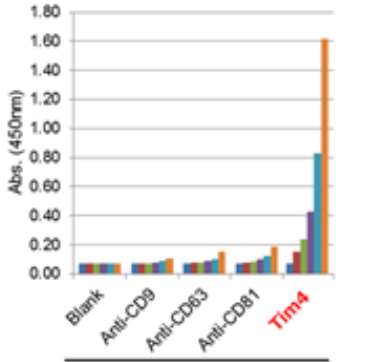
Ultracentrifugation



100 nm

Patent 6824742; US11639924, etc.
Exosome analysis method using TIM4

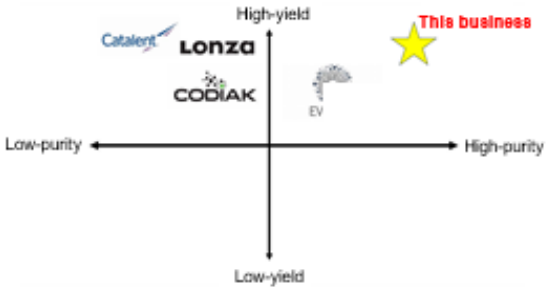
FUJIFILM Wako

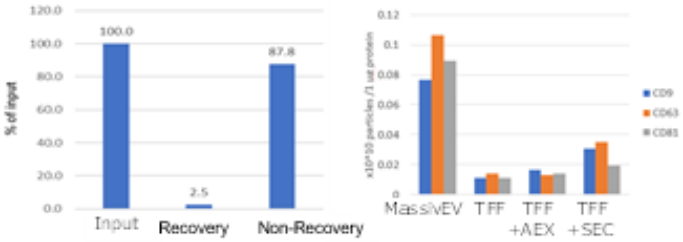


Proteins coated on a microtiter plate

Concentrations of sEVs 0← 2μg/ml (1/2 Dilution)

Comparison of mass purification methods	MassivEV (TIM4 method)	TFF + AEX	TFF + SEC
Steps and Time	1 step, 8 hours	2 steps, 10 hours	2 steps, 10 hours
Number of particles recovered from 1 liter	1×10^{12}	5×10^{11}	3×10^{11}
Purity	High (More than 10 times)	Low	Low
Exosomes that can be purified	High uniformity	Varies by fractionation	Varies by fractionation
Specific activity	3	1	1





Expected establishment date: December 2027 **Target market: Global**

Realization of next-generation film-type solar cells with low-cost, long life, and high efficiency for GX Innovation

FY2024 STEP2

Technology

Commercialization Promotion Organization Vision Incubate Co., Ltd.

Principal Investigator Kanazawa University Professor TAIMA, Tetsuya

Our two innovative technologies overcome key challenges and enable the development of next generation flexible perovskite solar cells (PSCs)

Innovative Technology 1: Ionic-liquid Addition Technology

① Stability (Lifetime)

Several hours of durability in ambient air

High stability of over 6000 hours without sealing

② Manufacturing Cost

Competitor's face high manufacturing costs due to the use of expensive sealing films

Simple sealing reduces costs

Innovative Technology 2: Bonding Technology

③ Coating Technology

Unestablished technology for neatly coating large-area films

Joint development of equipment with REIKO Co., Ltd.

④ Power Conversion Efficiency

Single-junction flexible PSCs reach up to 15% efficiency

Over 30% efficiency is possible in tandem solar cells

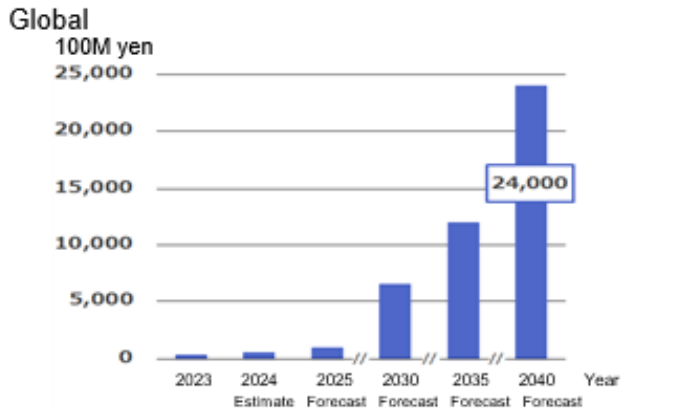
Professor, Nanomaterials Research Institute, Kanazawa University

TAIMA, Tetsuya Ph.D.

Unit leader, Study on Ionic-liquid Addition Technology

- FY2023 37 billion yen
- FY2040 2.4 trillion yen

Growth potential



Perovskite Solar Cell Market Size

Expected establishment date: FY 2026

Target market: Global, Domestic

TeSH
Tech Startup HOKURIKU

Thank you for your attention!

UCHIDA Fumihiko
Program Head of Directors, Tech Startup HOKURIKU/
Director, Startup Promotion Office,
Headquarters for Promotion of Future Innovation, JAIST