FY2023 Business Results
May 17, 2024

Perseus Proteomics Inc.

(Securities code: 4882)

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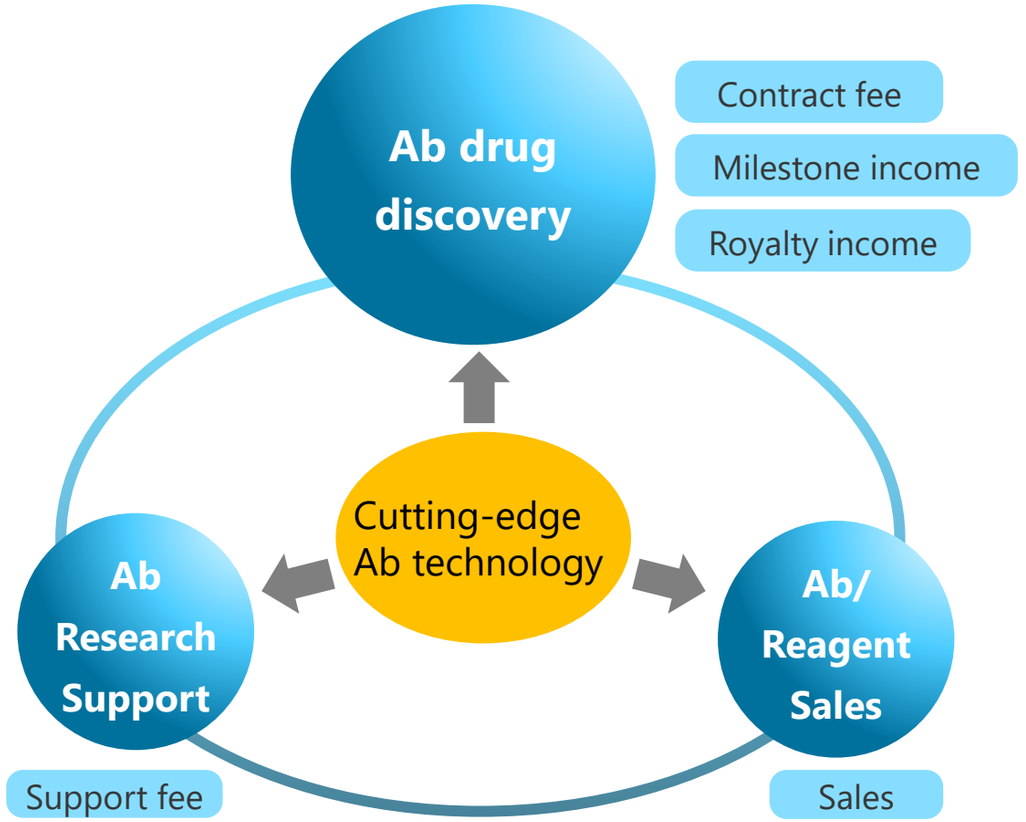
01 About Perseus Proteomics

Company outline

We contribute to global healthcare with cutting-edge antibody technology

Company name	Perseus Proteomics Inc.
Established	February 2001
Business	● Antibody (Ab) drug discovery ● Ab research support ● Ab/reagent sales
Securities code	4882
Office	HQ/Laboratory: 30-1 Nihonbashi-Hakozakicho, Chuo-ku, Tokyo, Japan Nagoya Laboratory: 2-22-8 Chikusa, Chikusa-ku, Nagoya-shi, Aichi, Japan
Capital	1,971 million yen*
Employee	28 (including part-time, contract employees)*

*as of Mar. 31, 2024



02

FY2023 Plans and Achievements

FY2023 plans and achievements

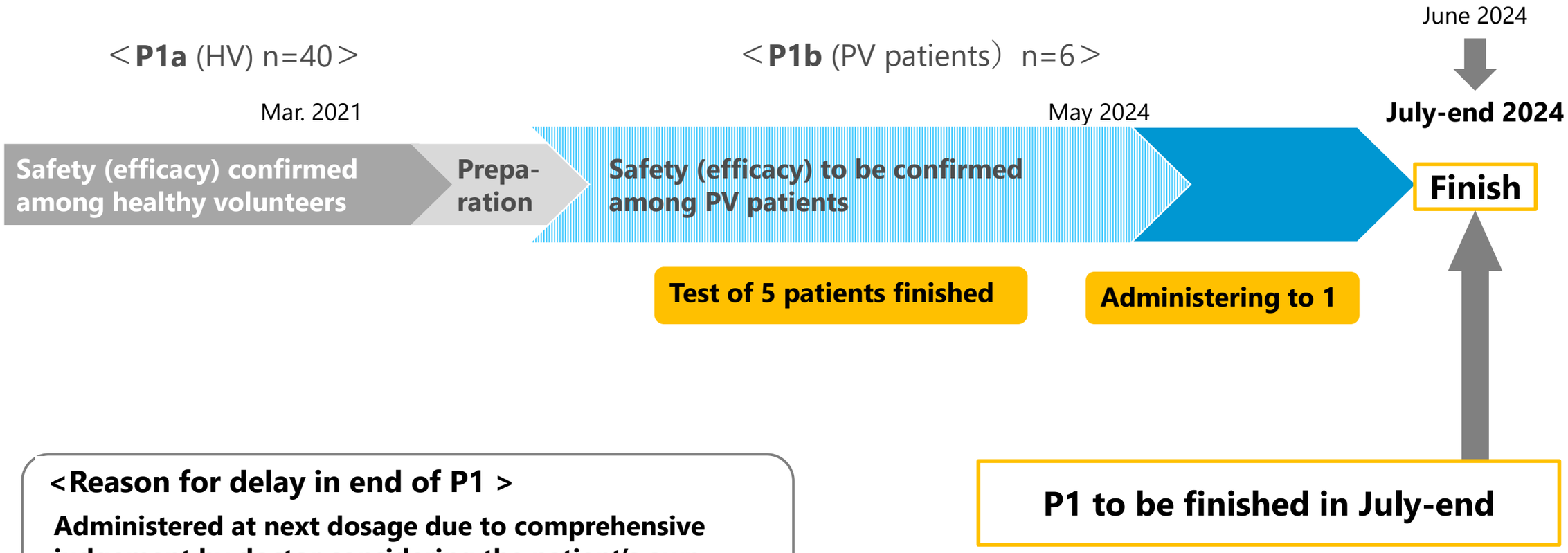
FY2023 Plans	Achievements
1 **PPMX-T003: Finish Polycythemia vera (PV) P1, licensing out in FY2024**	P1 end delayed to July-End 2024, Tests of 5 PV patients finished, no change to licensing out plan
2 **PPMX-T003: Promote Aggressive NK-Cell Leukemia (ANKL) investigator-led P1/2**	Initially administered to 2 ANKL patients, focused on providing information for medical institutes
3 **PPMX-T002: Formulate development plan for licensing out in FY2024**	Studying development plan with a licensing candidate
4 **PPMX-T004: Narrow down linker/drug Start preliminary toxicity tests**	Confirmed efficacy in promising linker/drug candidates, conducting preliminary toxicity tests

Pipeline

Code	Indication	R&D		Clinical trial			Approval	Market size（2024 forecast）
		Drug discovery	Non-clinical	P1	P2	P3		
PPMX-T003	PV				-FY2024 License-out			USD 1,923 M＊1
	ANKL							—
PPMX-T002	Solid tumor (ovarian cancer, etc.)			RI Ab（Y）	-FY2024 License-out			USD 5,430 M＊2
				RI Ab（Ac）				
PPMX-T004	Solid tumor (ovarian cancer, etc.)			ADC				USD 5,430 M＊2
				ADC				

＊1　Total of seven main markets (JP, US, EU5), Source: Global Information “Polycythemia Vera Treatment: Besremi, Jakafi, and Rusfertide Analysis”
＊2　Source: Evaluate Pharma Ovarian Cancer WW Market Value (2021), ovarian cancer only

1 PPMX-T003: PV
P1 test of the last patient ongoing, to end in July-end



<Reason for delay in end of P1 >

Administered at next dosage due to comprehensive judgement by doctor considering the patient's own background

1 PPMX-T003: PV
PPMX-T003 attracts attention at 65th ASH meeting/exposition, etc.

Interim report of P1 Presentations

JP	May 27, 2023	118th JSH Kinki Association
JP	Jul. 21-22, 2023	13th JSH International Symposium 2023
JP	Dec. 1, 2023	2nd Antibody Society of Japan Meeting
US	Dec. 9 -12, 2023	65th ASH Annual Meeting and Exposition

- **Safety and efficacy confirmed in all the 3 patients**

1 PPMX-T003 market: Position & superiority among competitive PV drugs

PV characteristics:
increase in RBC ⇒ blood viscosity↑ ⇒ thrombosis

: 60~ or thrombosis in the past (certain level of AEs are tolerable) — High risk

: under 60, no history of thrombosis — Low risk

Inhibits hematopoiesis

② JAK2 inhibitor
DNA synthesis inhibitor

③ Interferon

Injection every 2 weeks

Limits progress of disease

Decrease in internal iron amount

① **Phlebotomy**

④ PTG-300(under development)

Decrease in AE

Inhibits RBC generation only

New therapy expected to improve QOL

⑤ **PPMX-T003**

Injection every 3 months

- ✔ Not cause iron deficiency
- ✔ Decrease in RBC only

The more RBCs decrease, the severer side effects appear.

Side effects × ⟷ △QOL lowers ○

1 PPMX-T003 market: Recent PV drug related license-out cases (hot market)

Time	Aug. 2023*1	Jan. 2023*2	Jan. 2024*3
Item	siRNA targeting TMPRSS6	MWTX-003/DISC-3405	PTG-300
Licensee/ Acquiree	Alnylam Pharmaceuticals (US)	Mabwell Therapeutics（CN）	Protagonist Therapeutics (US)
Licenser/ Acquirer	Agios Pharmaceuticals (US)	Disc Medicine (US)	Takeda Pharmaceutical
Indication	PV	PV, beta-thalassemia	PV
Stage	Pre-clinical	P1	P3
Contract fee (million USD）	＋Commercial milestone ＋Royalty	＋2-digit % royalty	＋Development/Commercial milestones ＋Royalty



＊1 Agios Pharmaceuticals, 2023-8-3 “Agios Announces Exclusive Worldwide License Agreement with Alnylam for Novel siRNA for the Potential Treatment of Polycythemia Vera”
＊2 Disc Medicine, 2023-1-20 “Disc Medicine Announces Exclusive Licensing Agreement with Mabwell Therapeutics for Novel Anti-TMPRSS6 Monoclonal Antibodies to Modulate Iron Homeostasis”
＊3 Takeda Pharmaceuticals, 2024-01-31 Takeda and Protagonist Therapeutics, Inc. Enter into Worldwide License and Collaboration Agreement for Rusfertide, a Late-Stage Rare Hematology Asset”

2 PPMX-T003: ANKL
Ultra-rare disease; causes to be discovered and treatment to be established

What's ANKL?

- **Poor prognosis**

  50% survival period = 58 days (about 2 months)

- **Ultra rare disease**
  - 13 cases in Japan in 2020
  - Many cases in east Asia and Latin America
  - Cases may increase when advances in medical technology will enable easier diagnosis
- **Many cases in AYA generation** (age 15 to 39) and **40s**
- **No effective medical drug available**

Subsidy from AMED*

FY2022:	58M yen
FY2023:	93M yen
FY2024:	100M yen
Subsidy (max) total:	251M yen

* Through Project Promoting Support for Drug Discovery Support Program for Orphan drug prior to the Designation

2 PPMX-T003: ANKL
Investigator-led P1/2 (n=7) started in Mar. 2023, 2 patients administered

2022/03 2023/09 2025/03

ANKL basic research (Tokai Uni) → **Development** (Tokai Uni+PPMX) → **Investigator-led P1/2 clinical trial** (Hiroshima Uni+PPMX)

PPMX-T003

Clinical trial notification submitted (Prof. Ando at Hiroshima Uni)

2 patients administered



P1/2 finishes

Approval of world-first effective ANKL drug Orphan drug application

- **7 clinical trial locations**
- **Nationwide coverage**

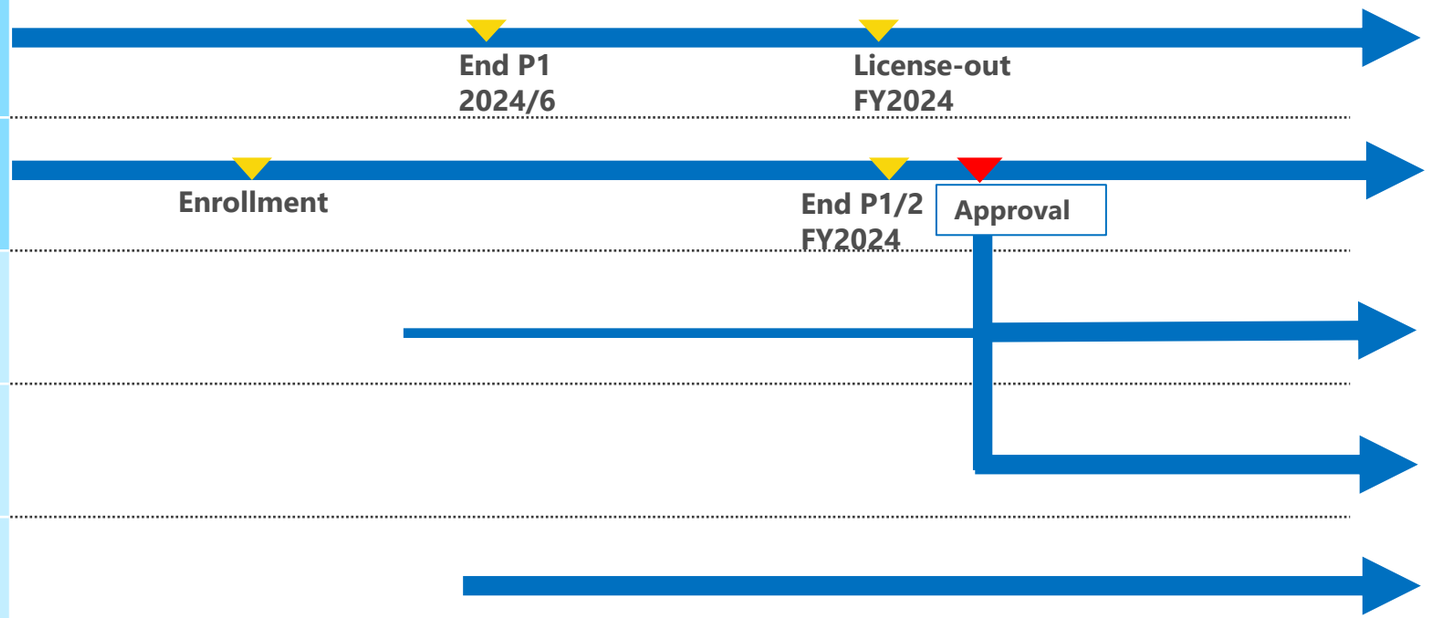
- **Clinical trial information**

jRCT
https://jrct.niph.go.jp/en-latest-detail/jRCT2061230008

2 PPMX-T003: ANKL
Expand indications of T003 through efficacy confirmation in cancer field

Indication	No. of patients	Stage
PV	300,000*1	P1 (patients)
ANKL	-	Investigator-led P1/2
AML	180,000*2	Joint research w/academia
Lymphoma	620,000*3	Joint research w/academia
Solid tumor	18.1 million*4	Joint research w/academia

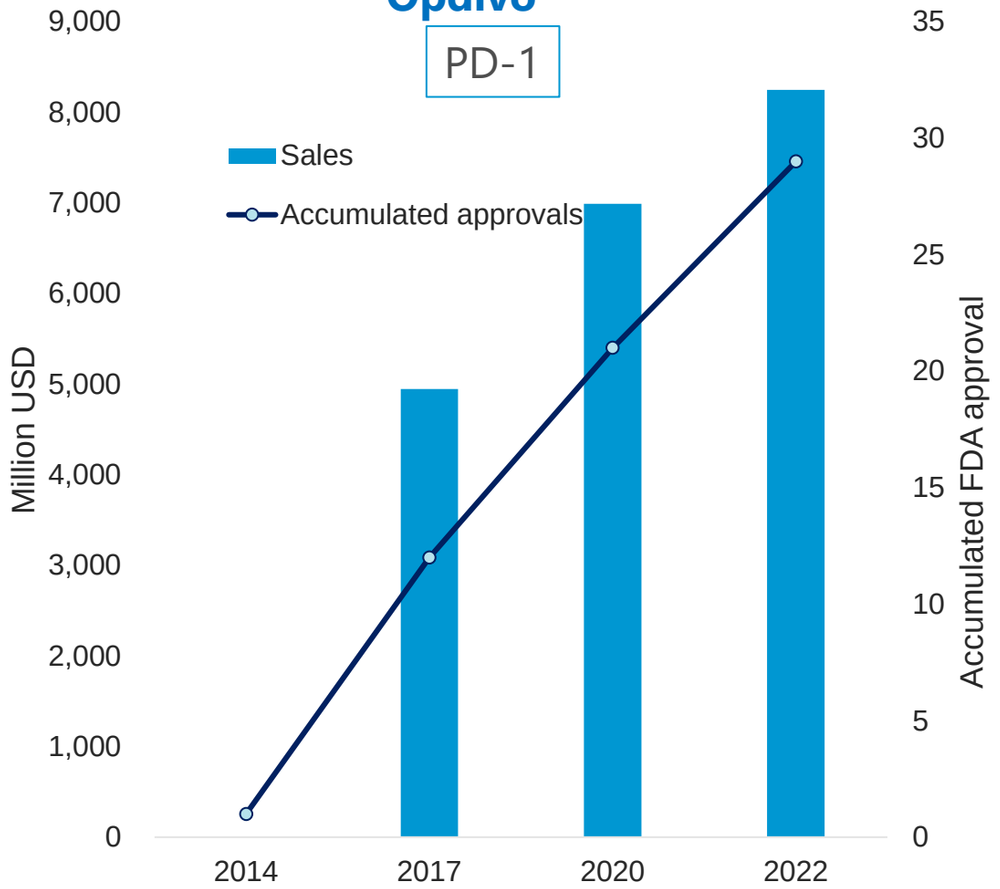
Development timeline image



Source: *1 Global Information “Polycythemia Vera Treatment: Besremi, Jakafi, and Rusfertide Analysis”
*2 Prepared by the Company based on WHO data and “Blood Reviews” Volume 36, Epidemiology of acute myeloid leukemia: Recent progress and enduring challenges”
*3 WHO *4: World Cancer Research Fund International (2020)

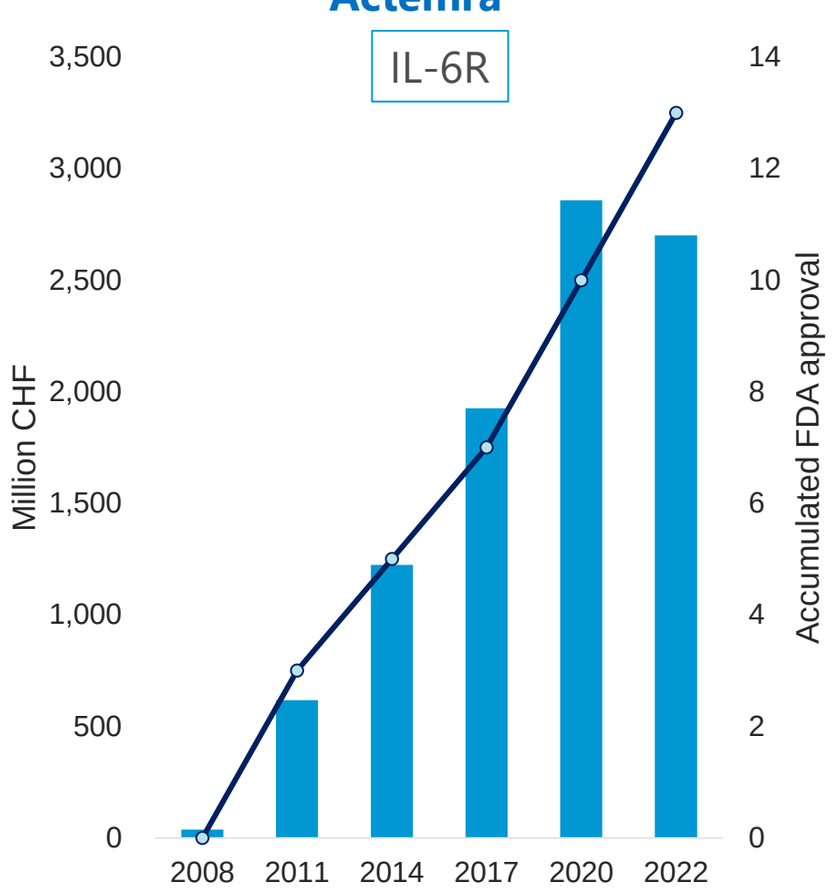
From orphan drugs to block busters
Examples of Japan-oriented Ab medical drugs

Opdivo*1



Melanoma: JP (1/100,000) → Non-small cell lung cancer kidney cancer, stomach cancer, Hodgkin lymphoma, etc.

Actemra*1

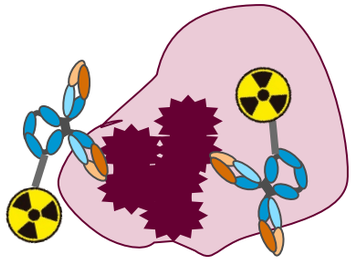


Castleman disease: JP*2 (1,500/yr in JP) → articular rheumatism, etc.

＊1 Prepared by the Company based on IR materials of Bristol Meyers Squibb and Roche.
＊2 Sales started by Chugai Pharmaceuticals in 2005 in Japan.

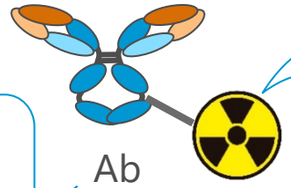
3 PPMX-T002:
Use Ab as it is and change to ^{225}AC, RI with higher effectiveness

1 Function of RI labelled Ab



PPMX-T002 Ab accumulates on CDH3 on cancer cells and RI kills cancer cells

2 Structure of PPMX-T002



Confirmed accumulation on cancer cells (in P1 expansion in USA)

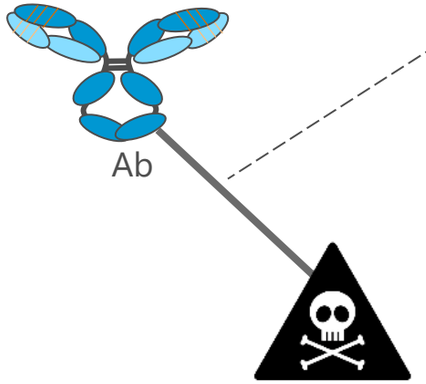
^{90}Y(β emitter)⇒**^{225}Ac (α emitter)** to improve efficacy

3 Achievements in first half and future strategy

FY2023	FY2024	
Study development strategy w/plural licensing candidates	Determine a licensing partner	License out

4 PPMX-T004: Under development as a new ADC

1 Development plan



Linker

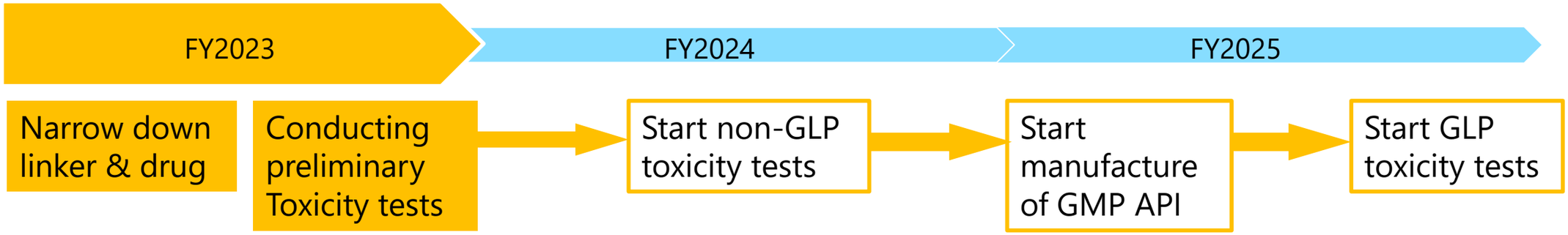
×

Small molecule anti-cancer drug

- High stability in blood
- Separated at the intended timing to release anti-cancer drug

- Small molecule anti-cancer drug that matches antibody characteristics

2 Achievements in first half and future strategy



Ab/reagent sales and Ab research support
Sales goal achieved, introduced new products/services utilizing drug discovery technology

Ab/reagent sales

Introduced 3 new products

- Anti-DM1 Ab
- Anti-DOTA Ab
- Anti-mAQP4 Ab

Ab research support

Expanded service menu utilizing single cell cloning technology

- Single cell gene analysis
- Retrieval of rare cells
- Cell cloning after inserting gene

- **Achieved 100 million yen of sales goal in FY2023**

03 FY2023 Business Results

FY2023 business results
Profit & Loss highlights

(million yen)

	FY2022	FY2023 Forecast	FY2023
Sales	**94**	100	**100**
Gross profit	86	91	87
SG & A	784	1,082	982
R&D cost	494	752	616
Other	289	330	366
Operating income	**(697)**	(991)	**(894)**
Ordinary income	**(689)**	(991)	**(879)**
Extraordinary loss	95	192	223
Net income	**(786)**	(1,185)	**(1,104)**

Ab research support
Ab/reagent sales

PPMX-T003 clinical trial
PPMX-T003 ANKL

Impairment loss of capex and head office relocation expenses

- Sales: Achieved the goal
- R&D cost: decreased due to delay in PPMX-T003 PV P1

FY2023 business results
Balance Sheet highlights

(million yen)

Assets	2023/3/31	2024/3/31
Cash & deposits	2,444	1,541
Total current assets	2,514	1,650
Non-current assets	51	42
Total assets	2,566	1,693

Liabilities	2023/3/31	2024/3/31
Current liabilities	111	128
Non-current liabilities	58	166
Total liabilities	170	295
Total net assets	2,396	1,398
Total liabilities and net assets	2,566	1,693

- Cash & deposits: decrease mainly due to R&D costs and capex
- Non-current liabilities: long-term deposits due to selection of PPMX-T003 (ANKL therapeutic drug development) for AMED program
- Capital ratio: 78.2%

04 Fundraising Updates and Future Growth Plans

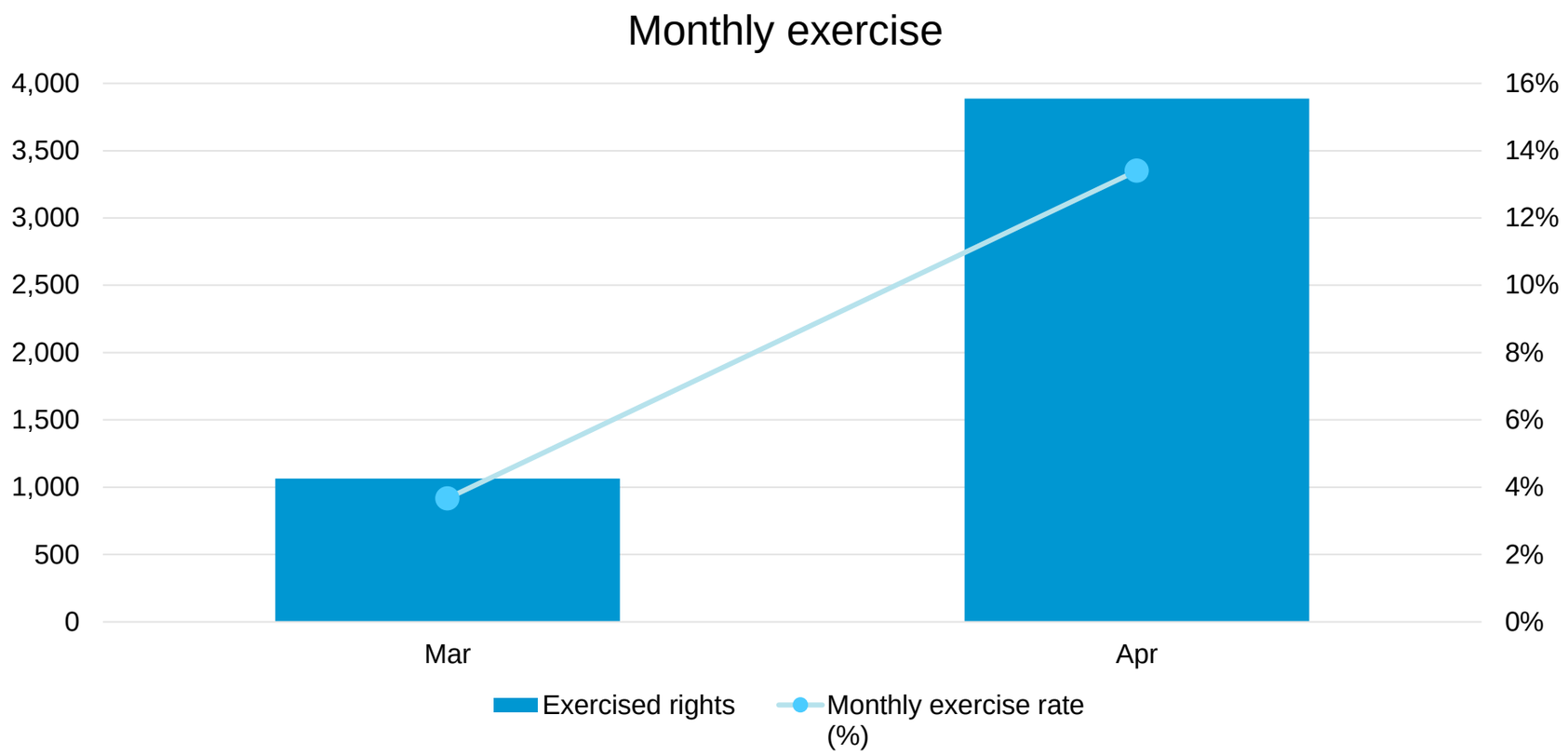
Outline of 28th share acquisition rights

28th share acquisition rights	
Allotment date	March 7, 2024
Allotee	Barclays Bank
Potential shares	2,900,000 (24.51% of shares outstanding as of December 31, 2023)
Issue price	1,566 thousand yen (54 yen per right)
Amount to be raised	1,543,966 thousand yen (Estimated net proceeds)
Exercise period	March 8, 2024 – March 9, 2026 (approx. 2 years)
Initial exercise price	536 yen
Adjustment of exercise price	To be adjusted to the amount equivalent to 93.5% of closing price at TSE on the trading date immediately preceding the exercise request effective date
Minimum exercise price	268 yen (amount equal to 50% of closing price at TSE on Feb. 19, 2024)

Usage of fund and time to use (plan)

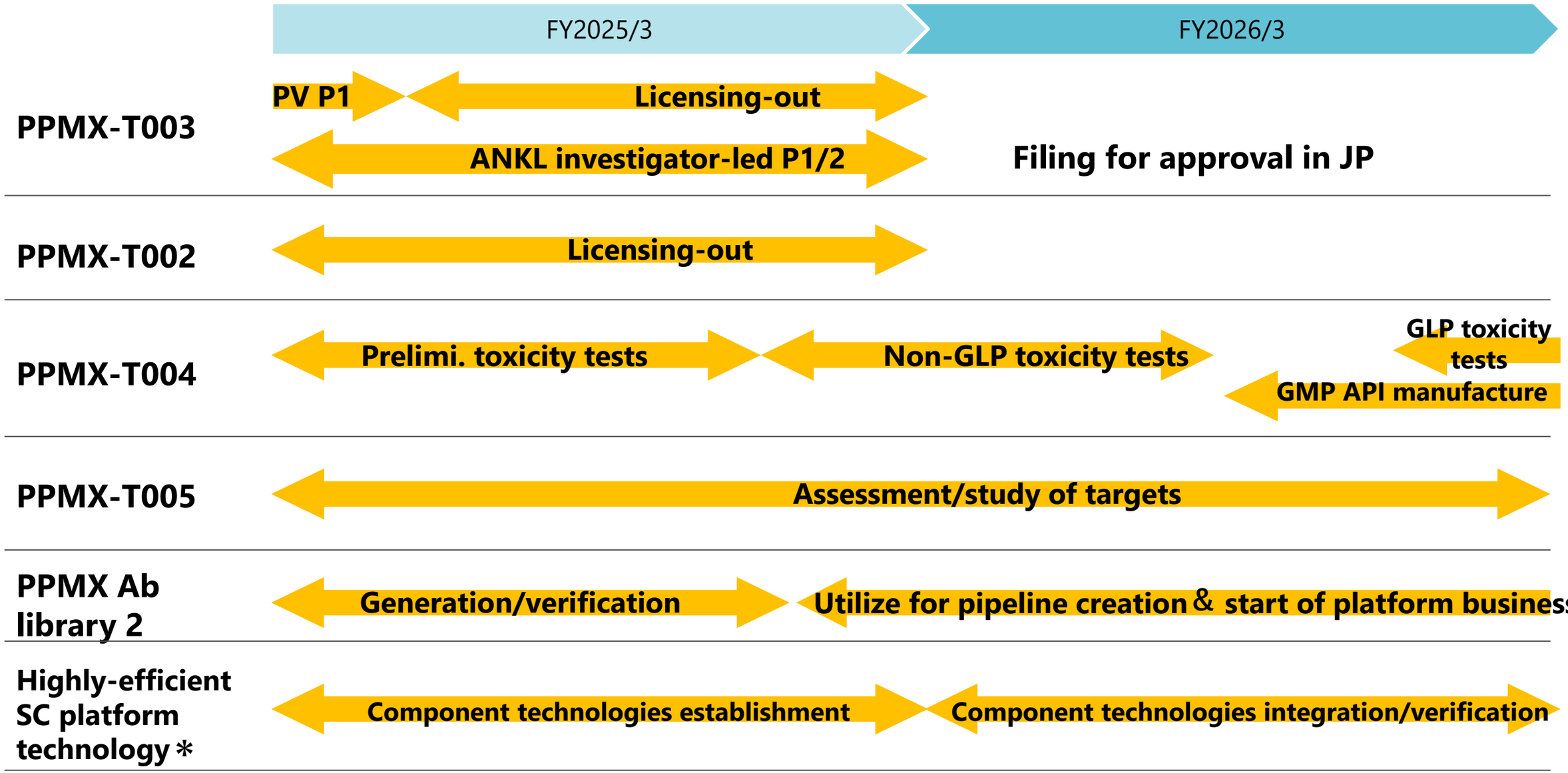
	Usage	Time to use	Amount
1	**R&D**	Apr. 2024 – Mar. 2026	**JPY 1,043M**
	● **PPMX-T003: P1 among PV patients**		JPY 69M
	● **PPMX-T002: Storage of GMP API and quality assurance tests**		JPY 55M
	● **PPMX-T004: GLP and preparation for GMP API manufacture**		JPY 530M
	● **Development of new pipeline, advancement of our unique Ab technologies, researchers' labor costs, etc.**		JPY 389M
2	**Working capital**	Apr. 2024 – Mar. 2026	**JPY 500M**

Fundraising update (March 8, 2024 – April 30, 2024)



■ Progress : 17.07%（as of Apr-end 2024）

Future growth plans



＊Selected for Tokyo Strategic Innovation Promotion Program

Ab drug discovery process (phage display method)

① Medical needs
(clinical doctors: good drugs N/A)

Patients

⑧Sales launch

⑦Approval, drug price determined

⑥Clinical trials
P1→P2→P3

⑤GMP manufacture

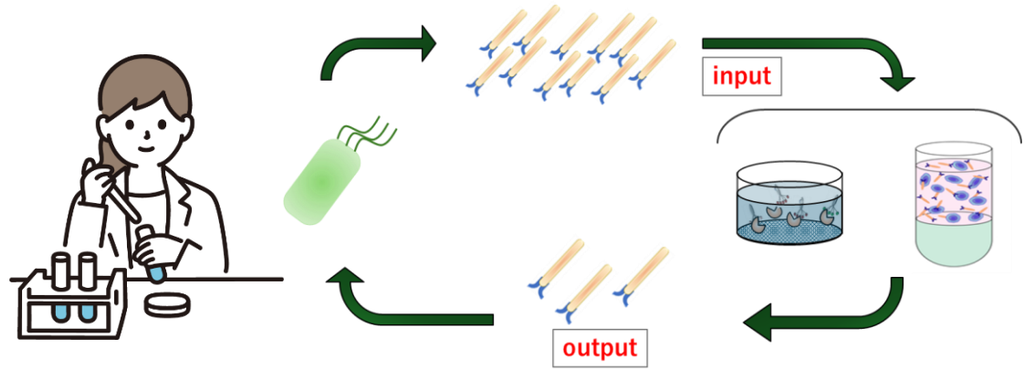
④Ab design
(Ab modality)

AI (AlphaFold 3)
Antigen-Ab binding
(steric structure)

②Determine target
(＊highly difficult antigens)

＊Highly difficult antigens = targets that have complicated shapes and that are rare

③Generate Ab



＊Generating Abs against highly difficult targets (antigens) is difficult. Time-consuming and poor efficiency. (A great amount of time and cost are necessary due to rarity)

Future targets are highly difficult antigens
Speed of finding Abs is crucial

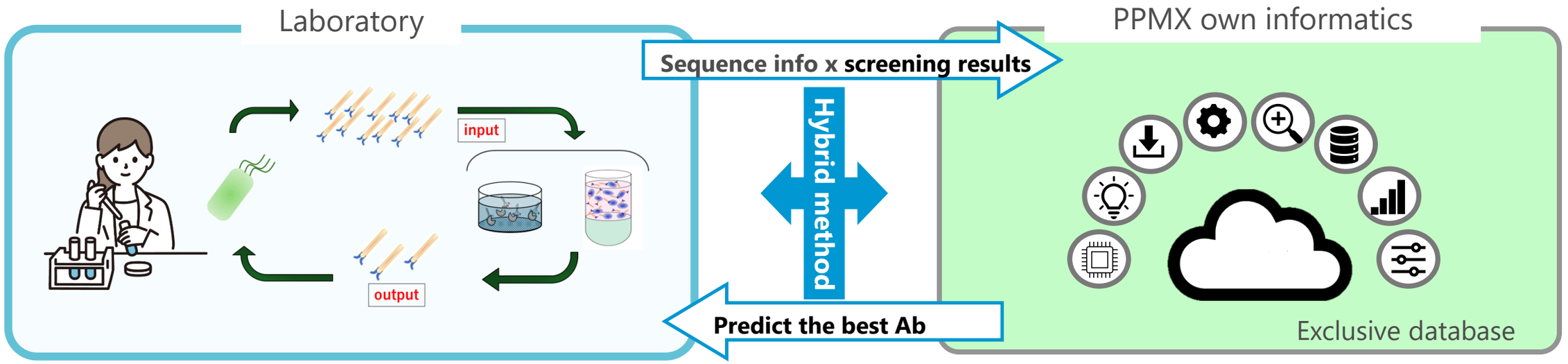
Screening Ab library at laboratory

Conventional

New

Usual antigen	✔	• Search for Ab to bind • Increase candidates • Select the best	To be assessed: 100-200 clones Generated Abs : 10-20 clones Candidates: a few clones
Highly difficult antigen	×	• Search for binding Ab • Increase candidates • Select the best	To be assessed: 100-200 thousand clones **Practically impossible** Generated Abs: 0 clone Candidates: 0 clone
	✔	•Import all screening data •Optimize* candidate search process by bioinformatics •Verify Ab by actual production of final candidate	

*Patents to be filed in FY2025/3



For highly difficult antigens: hybrid method of actual experiments and bioinformatics

PPMX Ab Library 2

PPMX Ab Library 1 (conventional)

100 times more variety than competitors

PPMX Ab Library 2 (New)

	100 times more variety than competitors	**Renew library while maintaining the same concept**
New	**ID-tagged library**	**Acquire all sequence information conveniently**
New	**Hybridization of screening method**	**Improve screening efficiency Visualize rare clones**

Expand the range for use and prepare for AI drug discovery in the future through advancing Ab Library

＊ID-tagging of library: patents filed in FY2024/3, in silico screening: patents to be filed in FY2025/3

Achievements so far and future growth

- License out of PPMX-T002/T003
- Promote development of PPMX-T004
- Develop other ADCs or combine Abs with other modalities
- Search for Ab for new targets with academia

- 2 clinical trials of PPMX-T003
- Improve efficacy of PPMX-T004

- **Phage display method**
- **Hybridoma method**
- **Ab screening method (ICOS method)**

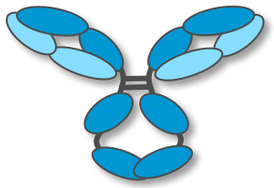
- **Improve phage library**
- **Establish technologies for AI drug discovery**

+

Technologies described in left

Appendix

Antibody drugs

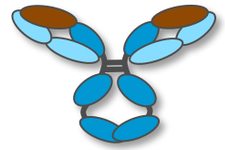


Antibody

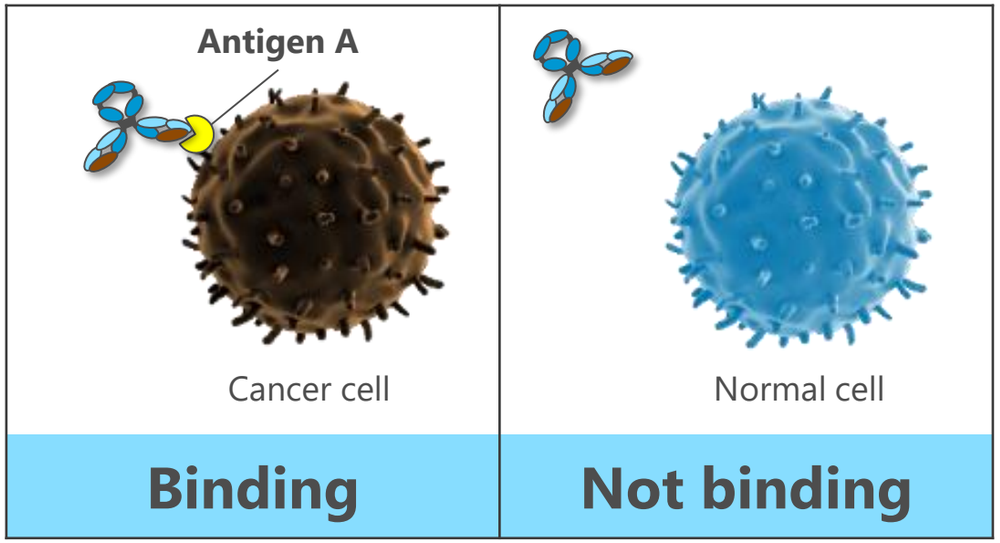
- Remove alien objects inside body
- Innate immune system
- Act on specific antigens (targets) only

⇒ ideal molecule targeting drug with few adverse effects

→ **High safety**



Antibody A



→ **Ab drug**

Medical drug consisting of antibody designed to act on disease regions only

Focus of Ab drug discovery competition
To the top of Ab biotech ventures utilizing superiority in technology

Select theme
Needs
Market superiority

→

Obtain best Ab
- Collect as many as Abs
- Select the best Ab efficiently

→

Clinical development → **License-out**
Most important for business progress
Centre of business results report

Valuation of pipeline determined at this stage

Performance evaluated by progress of development

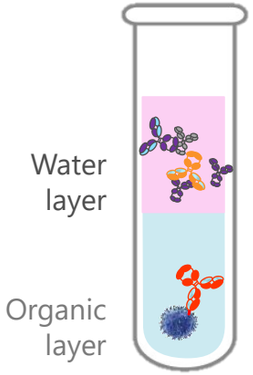
Methods to collect Abs (Utilize 3 basic Ab obtaining methods and improve continuously)

1) Recovered patients 2) Animal immune 3) Phage display method

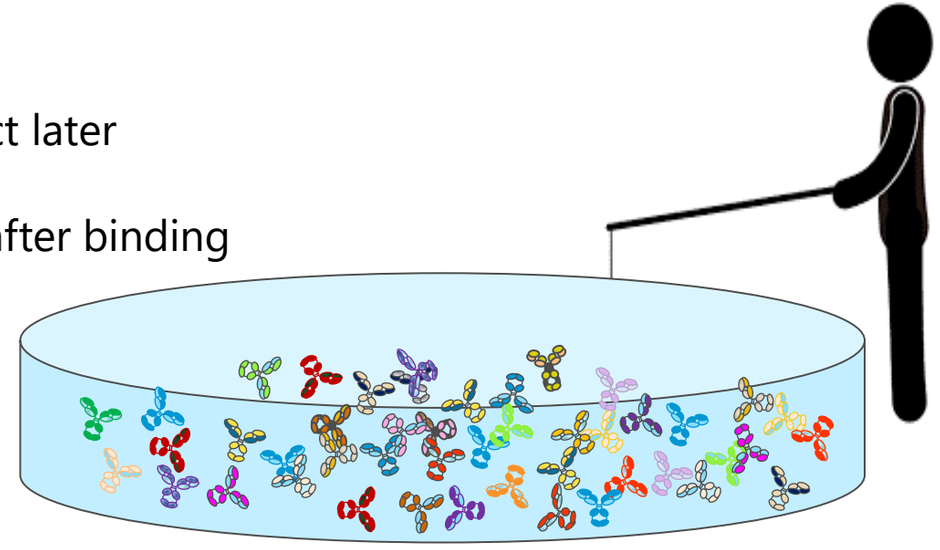
Methods to select

ICOS method using cells

Individual target fishing vs. Fishing with a fishing net to select later



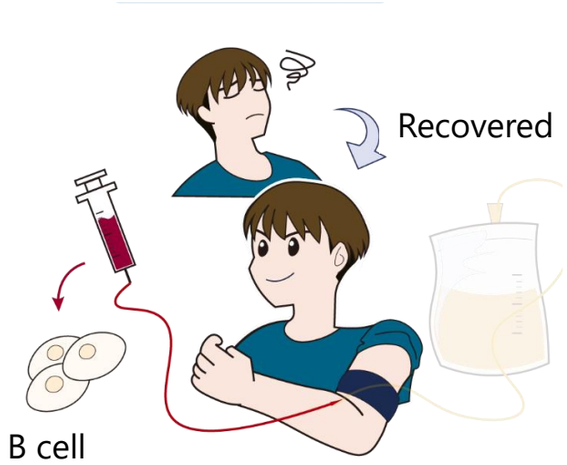
Select Ab by not only binding affinity but also functionality after binding
(enter inside of cells, bind receptors to block others, etc.)



Cover the methods to create Ab drugs and pursue cutting-edge technology

1 Recovered patients

Disease essence and clues for medical drugs

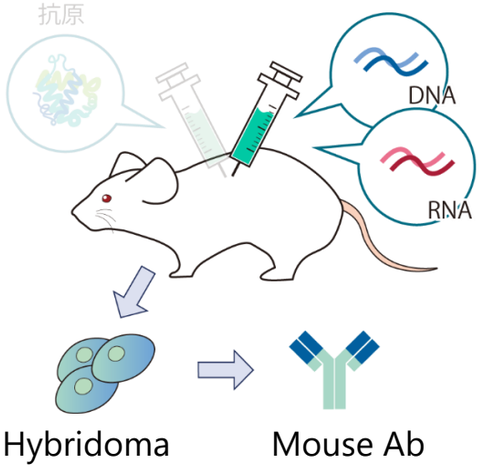


Generate Abs from one cell in blood

Single cell cloning service

2 Animal immune

Exquisite for gene manipulating drug discovery



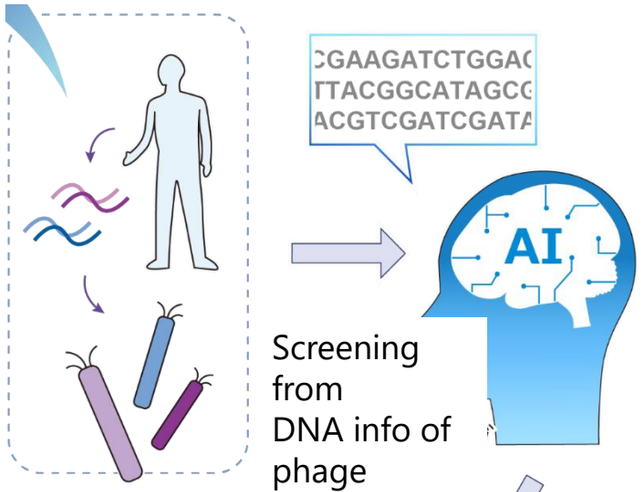
Humanization

Humanize murine Abs

Cell cloning service after inserting genes

3 Phage display method

Combine sequence info of NGS analysis and actual data



AI selects targeted Ab from library

Utilize our numerous Abs and actual data to AI



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