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Roche Roche Group

Chugai's Open Innovation

13 June 2025

CHUGAI PHARMACEUTICAL CO., LTD.

Important Reminders

This presentation may include forward-looking statements pertaining to the business and prospects of Chugai Pharmaceutical Co., Ltd. (the “Company”). These statements reflect the Company’s current analysis of existing information and trends. Actual results may differ from expectations based on risks and uncertainties that may affect the Company’s businesses.

Information regarding pharmaceuticals (including products under development) is included in this presentation, but is not intended as advertising or medical advice.

Please note that Japanese is the preferred language in expression and content, since the official language of this presentation is Japanese.

Agenda

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03	Chugai’s Partnering Activities	Head of Partnering Dept., Chugai Pharmaceutical Co., Ltd. **Yumiko Asano**

Chugai's Open Innovation in Drug Discovery

Vice President, Head of Research Div., Chugai Pharmaceutical Co., Ltd.

Dr. Tomoyuki Igawa

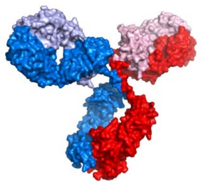
Chugai R&D Principles

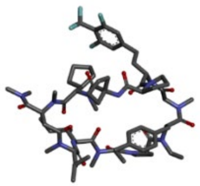
- ✓ “Technology-Driven” drug discovery
- ✓ “Quality-Centric” clinical candidates
- ✓ "Molecule-Centric/Biology-Driven" indication selection
- ✓ "Value Maximization" clinical development

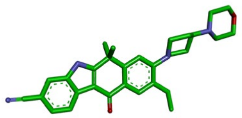
- ➢ Chugai R&D has fostered a unique company culture and mindset over a long period of time.
- ➢ Chugai R&D principles reflect this culture and mindset.
- ➢ We will contentiously follow these principles and achieve higher R&D productivity.

Chugai’s “Technology-Driven” Drug Discovery

1 Application of proprietary technology to drug discovery modalities


Antibodies


Mid-size Molecules


Small Molecules

2 Disease area agnostic drug discovery approach through modalities incorporating proprietary technologies

3 Successful track record of drug development

HEMLIBRA emicizumab

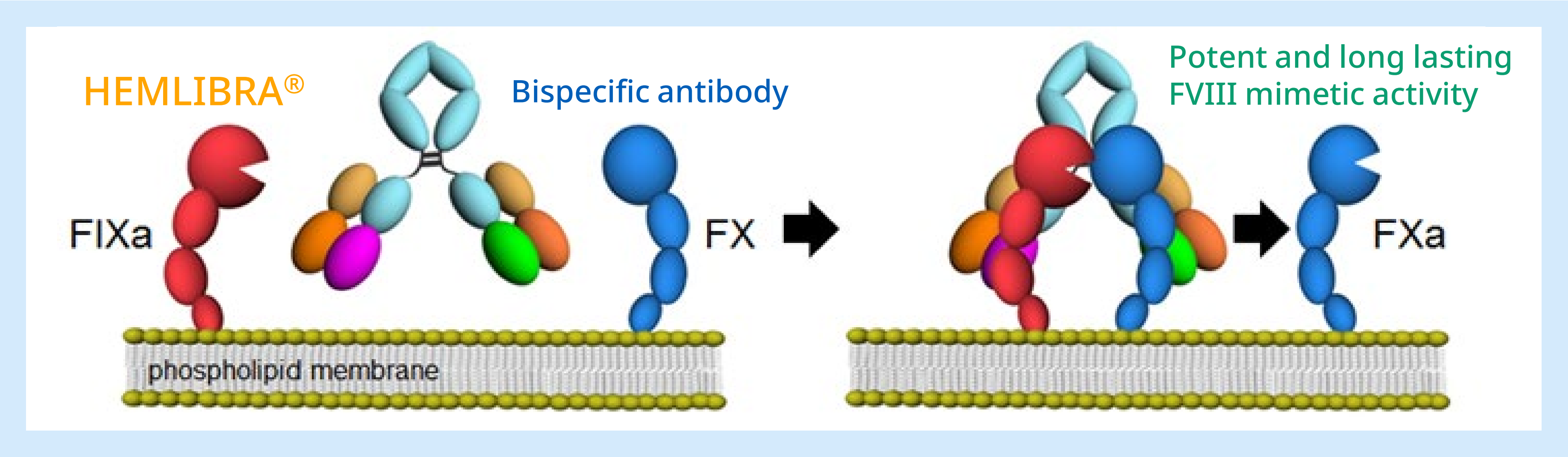
ALECENSA alectinib 150 mg capsules

PiaSky® (crovalimab-akkz) 340 mg/2 mL injection for subcutaneous use

Chugai Tech-centered Collaboration with Universities

Brand Name	Generic Name	Indication (Major)	Year Launched	2024 Sales*	Collaborator
Hemlibra®	Emicizumab	Hemophilia A	2017	Over 700 billion yen	Nara Medical University
Actemra®	Tocilizumab	Rheumatoid arthritis	2005	Over 400 billion yen	University of Osaka

*Global sales (including Japan)
Source: Roche financial materials
• Calculated at average 2024 rate of 1 CHF = 172 yen



Kitazawa et al, Nature Medicine. *2012*
Oldenburg J et al, N Engl J Med. *2017*

Chugai Antibody Technology

Bispecific antibody

ART-Ig®, FAST-Ig™

First FDA-approved bispecific IgG

Recycling antibody®

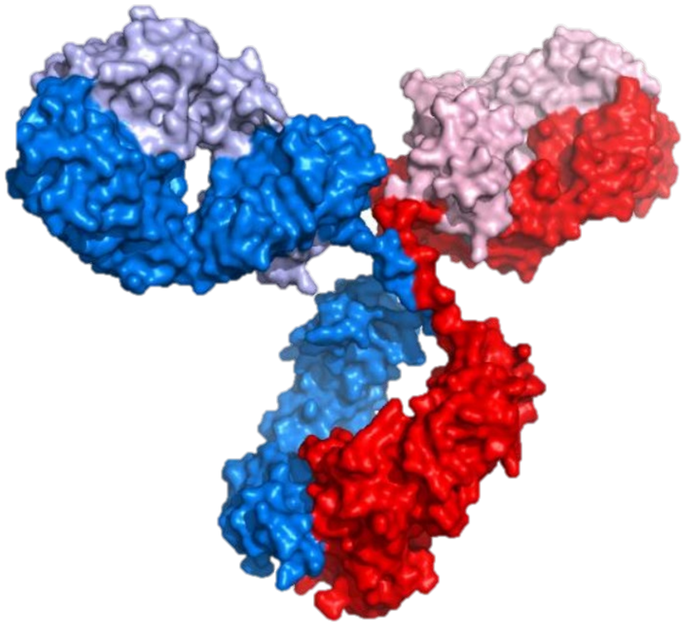
SMART-Ig®

First FDA approved pH dependent binding antibody

Sweeping antibody®

SMART-Fc®, pI-Fc®, etc.

First clinically tested antigen-degrader antibody



Conditional activation

Switch-Ig™, PAC-Ig® VHH

First clinically tested tumor specificity engineered antibody

T cell bispecific antibody

TRAB™, Dual-Ig®

First clinically tested dual signaling T cell bispecific antibody

Other

ART-Fc®, ΔGK®, LINC-Ig®

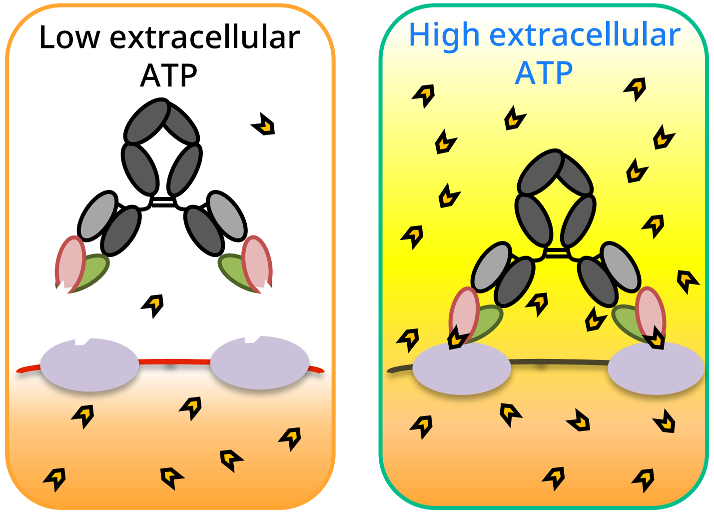
ATP Switch Antibody

■ Switch Antibody™ addresses previously undruggable MOA by expanding TW

- ✓ Anti-CD137 agonist Switch Antibody™ (phase 1)
- ✓ Anti-CTLA4 Switch Antibody™ (phase 1)
- ✓ Multiple programs (discovery)

TW: therapeutic window

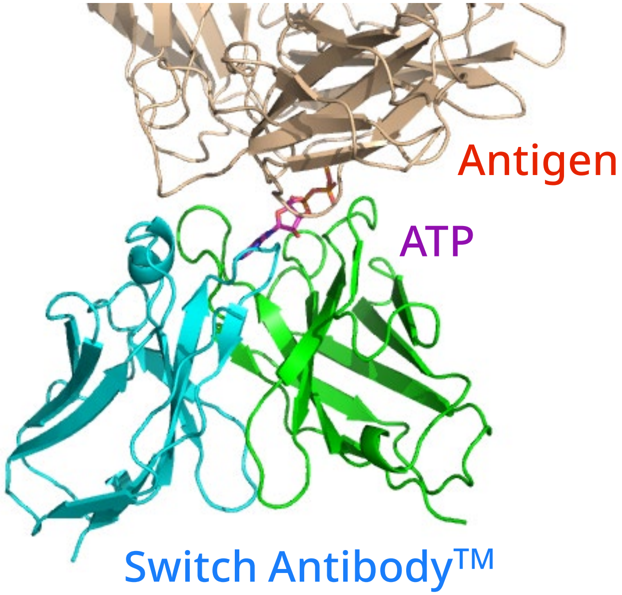
Concept of Switch Antibody™



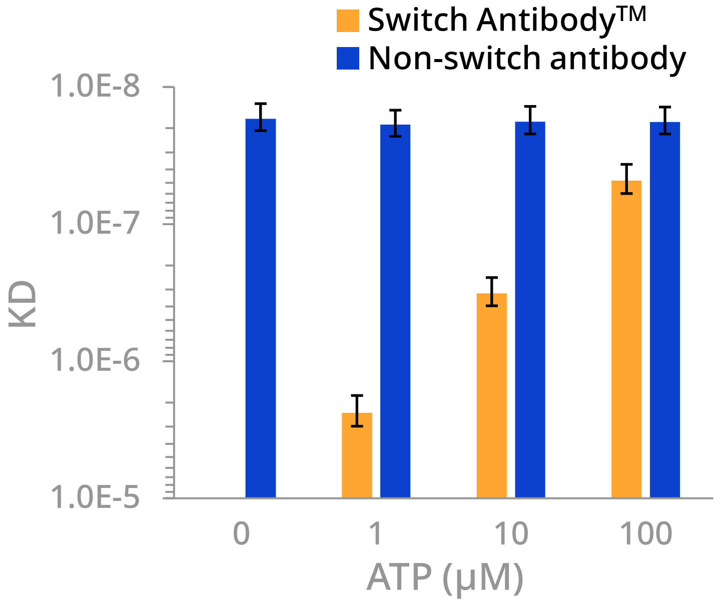
Minimal binding in normal tissue

Binding in tumor microenvironment

Structure of Switch Antibody™



ATP-dependent antigen binding*



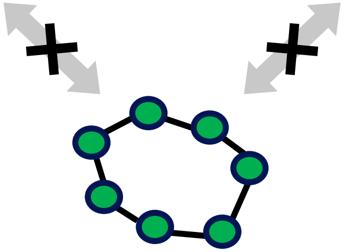
* Evaluation of antibody-antigen binding in the presence of ATP using Surface Plasmon Resonance (SPR) method (in vitro)

Mimoto et al., Cell Rep. *2020*, *Kamata-Sakurai et al*, Cancer Discov. *2021*

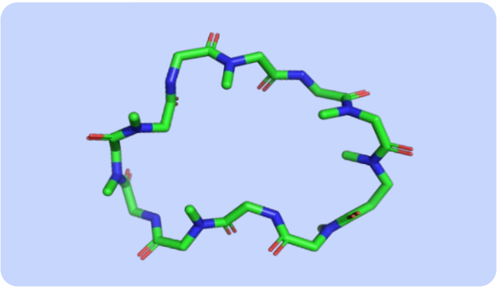
Chugai Mid-size Molecule Drug Discovery Technology

Oral bioavailability	Intracellular targeting	Pico molar binding

Cyclic peptides with 9-11 amino acids, more than half N-alkylated



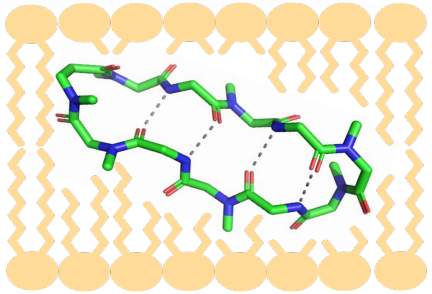
too rigid/stable



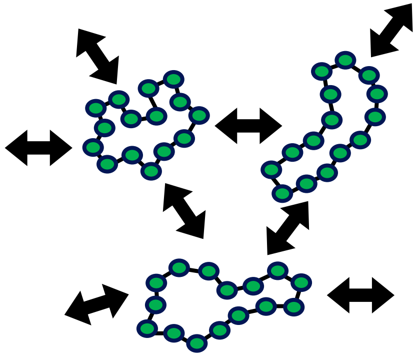
Metabolically stable
(hydrophilic and water soluble)

Structure flip

Conformational change



Membrane permeable
(lipophilic only inside the cell membrane)



too flexible
(excessive) diverse steric structure

≦ 7 amino acids | 9-11 amino acids | ≧ 15 amino acids

Ohta et al, JACS. 2023; 145(44): 24035-24051

Technology-driven Chugai Drug Discovery Pipeline

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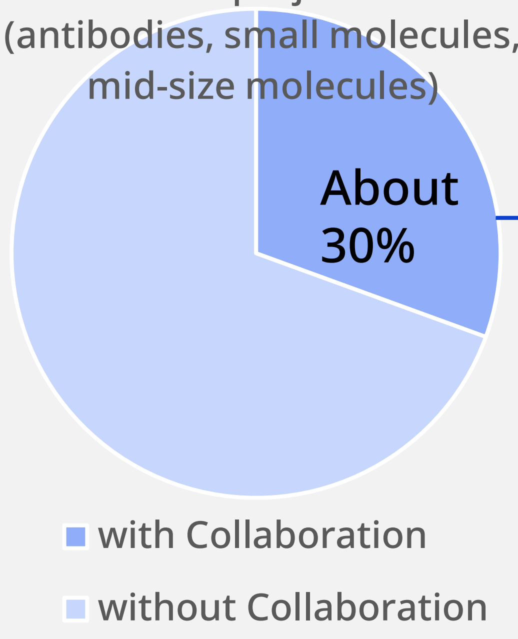
Collaboration with University of Tokyo, University of Osaka, Jichi Medical University, NIBN, Nara Medical University, Yokohama City University, and others from the drug discovery stage

Drug discovery – Pre-clinical development | Clinical studies | Launch

Drug discovery research+
pre-clinical stage
> 65 projects
(antibodies, small molecules, mid-size molecules)



Collaboration with University of Tokyo, University of Osaka, Araris, A*STAR, Noile-Immune, RIKEN, and others

Antibodies

Clinical studies: GYM329, NXT007, STA551, SOF10, DONQ52, RAY121, GC33, ERY974, AMY109, ALPS12, SAIL66, ROSE12

Enspryng® (MOGAD, AIE, TED, DMD)
PiaSky® (aHUS, SCD)
GYM329 (SMA, FSHD, obesity)

Launch: Enspryng®, Hemlibra®, Actemra®, PiaSky® (PNH)

Products licensed to third parties other than Roche
NEMLUVIO® (US/EU)
Mitchga® (Japan)

Small Molecules

REVN24
MINT91

Alecensa® (Stage III NSCLC)

Launch: Alecensa®, Edirol®, Oxarol®

Products licensed to third parties other than Roche
AP306 (Hyperphosphataemia)
orforglipron (T2D, obesity)
avutometinib (LGSOC, NSCLC, mPDAC)
Deberza®

Mid-size Molecules

LUNA18

Blue: Joint development with Roche Red: Out-licensed to third parties other than Roche
Clinical and Launched are shown as of April 24, 2025
Drug Discovery and Pre-clinical development are shown as of January 30, 2025

The Future of Chugai Open Innovation

Up until now

- Domestic academia
- Domestic companies
- Joint research/collaboration
- Antibody modality centered

From now on

- Domestic and overseas academia
- Domestic and overseas companies
- VC
- Joint research, collaboration, investment
- All modality/platform technology

✓ Expand scope of open innovation from domestic-centered to domestic & global
✓ Increase presence of Chugai in innovation communities such as Boston
✓ Evolve from a global top player into a company others "want to partner with"
✓ Pursue new innovation opportunities

Strengthen the foundation for continuous creation of innovative drugs by creating synergies with Chugai drug discovery technologies through the expansion of open innovation

The Aims of Chugai Open Innovation

- **Open innovation as a means of realizing Chugai's research strategy**
  - By partnering, realize drug discovery that centers around our own research but cannot be realized singlehandedly
- **Open innovation that is researcher-initiated and expands our drug discovery potential**
  - Open innovation from the bottom up rather than the top down

- **Examples of targets of Open Innovation**
  - Targets that can exhibit the advantages of Chugai's own modalities and technologies
  - Third-party technologies that increase the value of Chugai's own modalities and technologies

Win-Win Collaboration: Drug Discovery Targets

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Partner

Disease-agnostic new targets

Targets based on newly elucidated biology

Difficult-to-approach targets

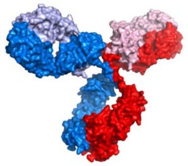
Examples:
- New drug targets identified at University of Osaka

Partner has targets that can demonstrate synergies with unique modalities

Chugai has modalities based on proprietary technologies

Chugai

Disease-agnostic technology-driven drug discovery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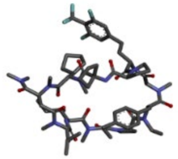
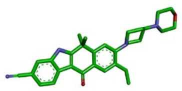

Mid-size Molecules


Small Molecules

Open Innovation

Unmet Medical Needs of patients

First in Class

Win-Win Collaboration: Drug Discovery Technologies

Partner

Technology to realize new concepts

Drug discovery technologies that enhance the value of Chugai's proprietary technologies

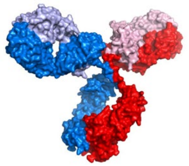
Examples:
- Noile-Immune CAR-T Technology
- Araris ADC Technology

Partner has technologies that add value to existing modalities

Chugai has modalities based on proprietary technologies

Chugai

Proprietary technologies with competitive advantages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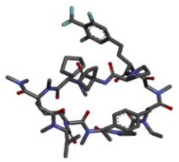
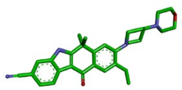

Mid-size Molecules


Small Molecules

Open Innovation

Unmet Medical Needs of patients

First in Class
Best in Class

Expanding Chugai's Open Innovation for the development of future Healthcare

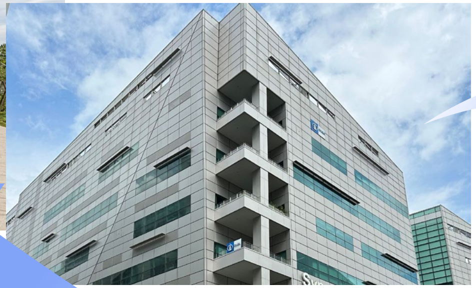
CHUGAI PHARMACEUTICAL

A member of the Roche group

CHUGAI VENTURE FUND

- Leal Therapeutics
- HYKU BIOSCIENCES
- Undisclosed UK Based Company
- STYLUS

CHUGAI PHARMABODY RESEARCH



Third Party

- University of Tokyo
- NUS National University of Singapore
- University of Osaka
- Agency for Science, Technology and Research SINGAPORE
- FRONTEO
- araris
- Noile-Immune Biotech

Start-up
Biotech
Academia

Summary

- Chugai has created multiple blockbusters through external collaborations.
- At the same time, Chugai has enhanced competitiveness with proprietary technologies without excessive dependence on external sources.
- Our open innovation strategy creates synergy with in-house capabilities to strengthen our drug discovery platform.
- We aim to expand international partnerships and integrate novel targets and technologies from global sources to enhance R&D quality and sustainability.

Chugai Venture Fund: Investment Overview

Head of Chugai Venture Fund, LLC

John Gustofson

Establishment and start of operation of CVF

1. Start of operation：January 2024
2. Location：Boston, MA

President
John Gustofson

Principal
Taku Fukuzawa

Associate
Tatsushi Kodama

Associate
Yoshikazu Ando

Office Manager
Stefanie Feldmann

John Gustofson has over 25 years of experience in Corporate Venture Capital and Business Development, previously including Managing Director of AbbVie Ventures and Business Development at AstraZeneca. Served as a Director of numerous venture companies in which he has invested (Disarm Therapeutics, Caraway Therapeutics, Ribometrix, etc.)

CVF's Role in Chugai's Open Innovation Strategy

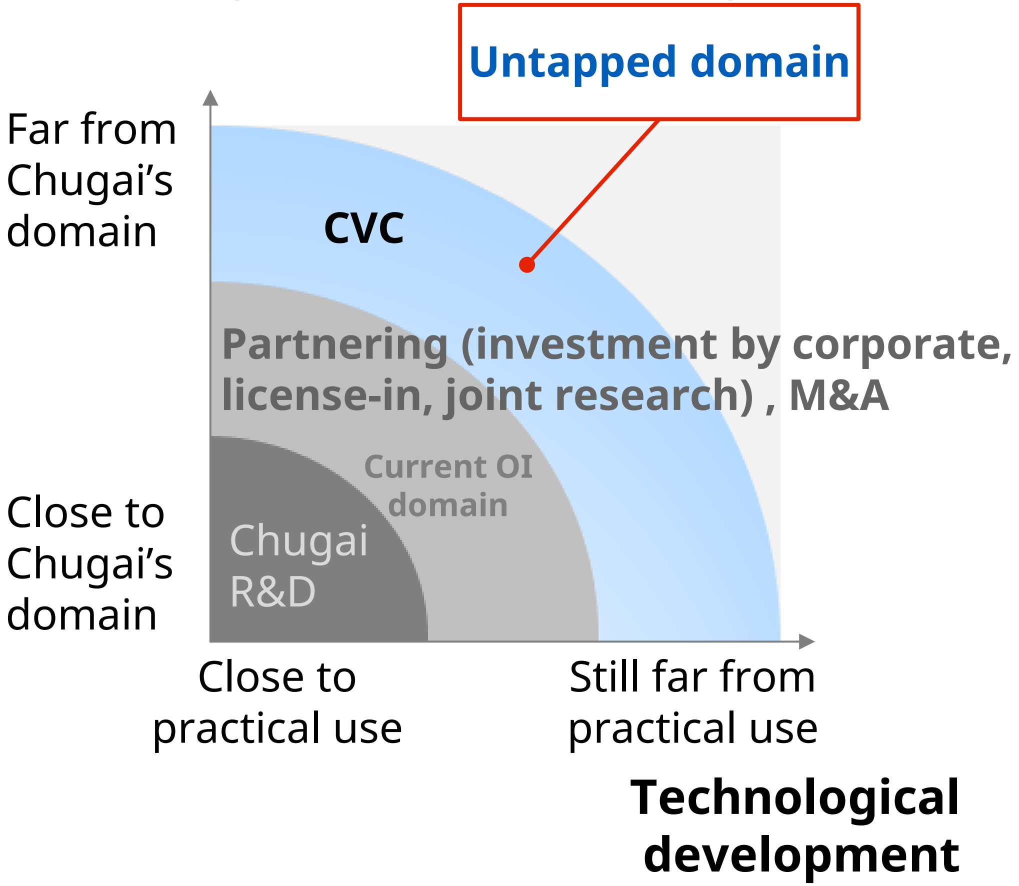
Vision

CVF will help improve the quality and continuity of Chugai's R&D by introducing innovation throughout the world

Mission

CVF will discover and review emerging companies focusing on innovation complimentary to Chugai's R&D

Technological domain for Chugai



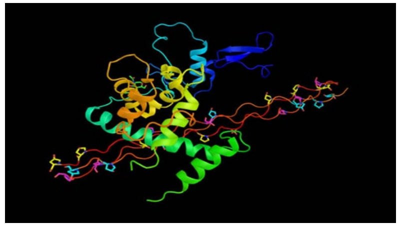
Chugai Venture Fund (CVF)

Fund Size	**$200 million**	Investments	**~3 per year | $20M per company**
Investment area	**primarily in the U.S., Europe, and Japan**	Strategy	**Early stage (preclinical) investing**

Scope

1	**Target**	**Technology platforms**
2	**Target**	**New target identification**
3	**Technology**	**Technologies that can enhance Chugai's core technologies**
4	**Digital**	**Digital and AI technology that can assist drug discovery and translational research**

Investment Technologies



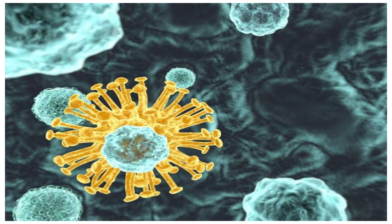
Protein Stabilization
Protein Degradation

RNA & DNA
Biology

Gene Therapy
Gene Editing

Platform
Technologies

Precise Tissue
Delivery

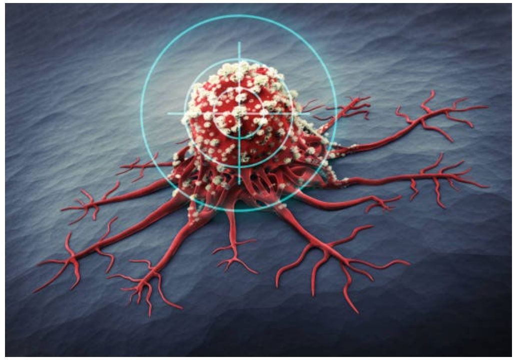


T-Cell
Biology

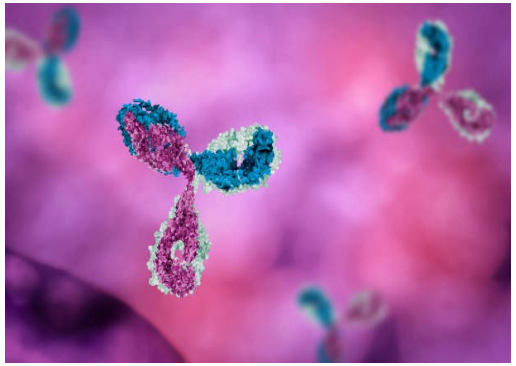
Digital
Technology

New Target
Identification

Major Investment Indications



Oncology



Immunology

Metabolic Diseases

Ophthalmology

Rare Diseases

CNS

How Do We Review an Investment Opportunity

What do we look for in an investment:

1. Management team
2. Novelness of science
3. Scientific hypothesis
4. Data supporting hypothesis
5. On strategy for Chugai R&D
6. Patent protection
7. Commercial Potential

Different than Business Development, Ventures looks at the promise of the technology not solely on data

CVF Working with Chugai R&D

Goal: CVF will help expand learnings for Chugai's R&D into new scientific areas by investing external innovation

Benefit for R&D: CVF will help finance early-stage biotech companies. The investment will a) provide money so the biotech can generate more data, b) Chugai will monitor these companies closely to learn about the science and c) if the data looks interesting, Chugai may elect to form a collaboration with the company

Working Together: Chugai R&D and Ventures will work closely together to evaluate and agree on the best investment opportunities

The CVF will invest in companies working on technology/programs that are complimentary to Chugai R&D:

- We will not invest in areas in direct competition with Chugai's internal programs

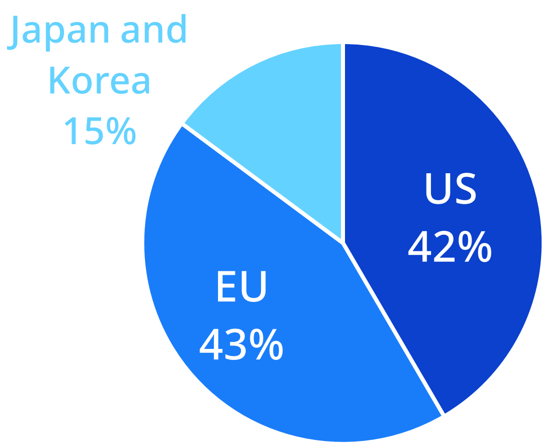
Success is measured by investing in good companies:

- Chugai eventually partners with the company
- Another Pharma partners with the company
- CVF makes money on the company either by IPO or acquisition

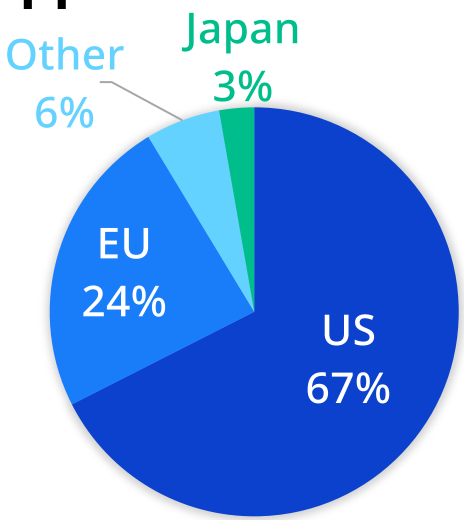
IPO: initial public offering

CVF by the Numbers – Performance Metrics

>100 venture capital firms met worldwide



528 Opportunities reviewed



4 Deals Completed

Portfolio

Hyku Biosciences is developing small molecule therapeutics with novel mechanisms of action to potently inactivate proteins that drive disease progression

Leal Therapeutics is a biotechnology company dedicated to developing precision medicines for patients with high need CNS disorders

UK Based Company

Stealth Mode

Stylus Medicine is harnessing the power of a novel class of enzymes to enable the insertion of any-length genetic sequences into the human genome to develop permanent cures for patients.

My Learning's In The First Year of CVF's Existence

External perception:

- Chugai has an excellent scientific reputation however, people do not know why
- People do not fully understand Chugai's impressive accomplishments such as:
  - Chugai's market cap is larger than GSK, Merck KGaA, Takeda & Bayer (global companies while Chugai primarily sells in Japan, Taiwan and Korea) at the end of May in 2025.
  - Chugai's Ph3 in-house products success rate over the last 15 years is better than any other pharma
  - Chugai's impressive market growth over the last 15 years

My internal observation

- Chugai is very humble and does not brag about our accomplishments such as pioneers of antibody development including the first bispecific antibody approved, one of the first Sweeping Antibody® and also Recycling Antibody® in the clinic. Chugai Switch Antibody™ that can turn on/off in the presence of ATP

Boston/Cambridge – Leading Hub for Biotechnology and Pharmaceutical Innovation

Unparalleled Concentration of Life Science Talent:

- World-class institutions (Harvard, MIT, Tufts, Boston University, Boston College) ensure continuous top-tier talent pipeline
- 8,000+ advanced life sciences graduates annually (2023)
- Highest global concentration of life science professionals: 1 in 17 workers (2024)

Robust Funding Ecosystem:

- MA biopharma companies raised $18.2B in VC (2023), ~25% of US life science funding
- Leading life science VCs (Third Rock, Atlas, Flagship, MPM, Polaris) raised $10B+ since 2023
- 18 biotech IPOs in 2023 raised $3.2B, representing ~1/3 of all US biotech IPOs
- 31% of all US biopharma VC investment flowed to Massachusetts (2023)

Source:
1. Mass Bio 2024 Industry Report: https://www.massbio.org/industry-reports/industry-snapshot/
2. Foothold America: www.footholdamerica.com/blog/from-boston-to-san-diego-where-should-your-life-science-company-expand-in-the-us/

Boston/Cambridge – Leading Hub for Biotechnology and Pharmaceutical Innovation

Strong Industry Presence:

- 1,200+ biotech companies (2024), including giants Biogen, Moderna and Vertex
- Kendall Square: highest global biotech density, "most innovative square mile on planet"
- 14 of top 20 global biopharma companies maintain significant Boston presence (2023, up from 11 in 2020)
- MA-headquartered companies represent 15.2% of US and 6.4% of global drug pipelines

World-Class Research Infrastructure:

- World-class research hospitals: Massachusetts General Hospital, Brigham and Women's Hospital, and Dana-Farber Cancer Institute
- 1,500+ clinical trials conducted in 2023, highest globally for any metro area
- Broad Institute (MIT/Harvard) published 500+ peer-reviewed genomics papers (2023)
- Record $4.1B NIH funding in 2023 (+30% from 2021), highest per-capita nationally
- 3.5M sq ft new lab space opened, additional 5M sq ft under construction (early 2024)

Source:
1. Mass Bio 2024 Industry Report: https://www.massbio.org/industry-reports/industry-snapshot/
2. Foothold America: www.footholdamerica.com/blog/from-boston-to-san-diego-where-should-your-life-science-company-expand-in-the-us/

Summary

- Evaluated 528 investment opportunities and completed 4 strategic deals potentially complimentary to Chugai's R&D since our 2024 Boston launch
- CVF is helping to expose Chugai R&D to the latest innovation across the world
- CVF and Chugai R&D work together to evaluate new technologies that could help enhance further drug development in ways not previously considered
- With each investment, Chugai R&D is learning about the newest technologies and how they could benefit patients as well as Chugai R&D
- CVF will help improve the quality and continuity of Chugai's R&D by introducing innovation throughout the world

Chugai's Partnering Activities

Head of Partnering Dept., Chugai Pharmaceutical Co., Ltd.

Yumiko Asano

Three sectors of Chugai's Open Innovation Activities

CHUGAI
Roche Group

Third Party

maruho
Kowa
Lilly
GALDERMA EST. 1981
VERASTEM ONCOLOGY
argenx
ALEBUND
novo nordisk®
JW Pharmaceutical
GSK

Out-license

Deliver Chugai's discovered innovative drugs globally

Chugai Venture Fund

Emerging technology investments

In-license

Collaboration for accelerating Chugai drug discovery,
Late-stage clinical assets for Japan

Leal Therapeutics™
HYKU BIOSCIENCES
Undisclosed UK Based Company
STYLUS

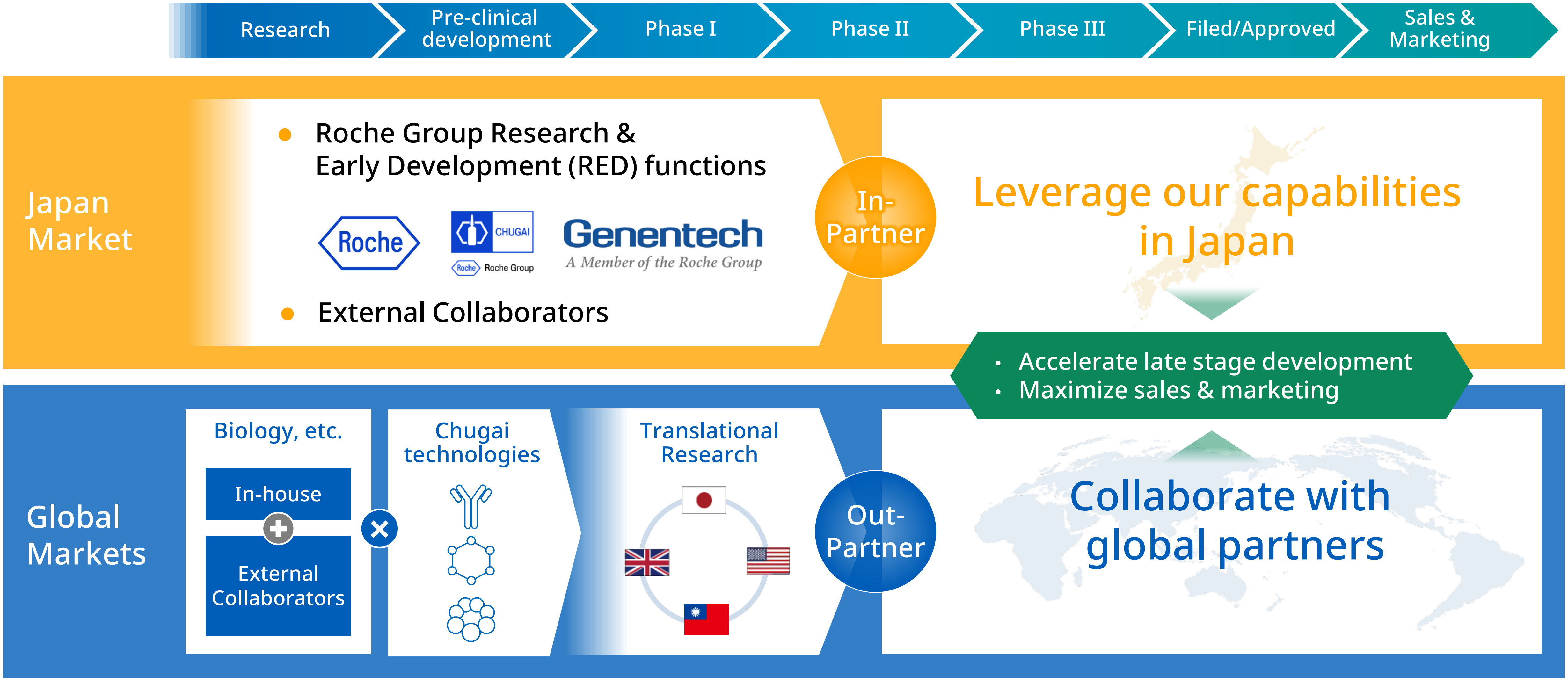
Third Party

University of Tokyo
NUS National University of Singapore
University of Osaka
Agency for Science, Technology and Research SINGAPORE
FRONTEO
araris
Noile-Immune Biotech
Start-up
Biotech
Academia

Genentech
A Member of the Roche Group
Roche

Strategic Alliance with Roche

Chugai Business Model and Partnering



Key Recent Chugai Partnering Achievements

Drug discovery

Enhance drug discovery

Clinical

Chugai innovation to global

Deliver First in Class/Best in Class drugs to patients around the world

ADC drug discovery
Collaboration (2025)
araris

AI drug discovery
Co-creation (2025)
FRONTEO

Antibody engineering technology
Out-License
argenx, Lilly, novo nordisk

EOS789/AP306
Out-License (2021)
ALEBUND

AID351
Out-License (2025)
GSK

nemolizumab
Out-License (2016)
GALDERMA, maruho

orforglipron
Out-License (2018)
Lilly

avutometinib
Out-License (2020)
VERASTEM ONCOLOGY

Partnering activities aligned with drug discovery strategies

- Pursue innovation opportunities through partnerships with global academia and biotech companies
- Global development/launch/sale of in-house products

The Value that Chugai Creates with Partners

- We aim to expand the development pipeline through partnerships that provide synergies with our Chugai drug discovery technologies.
- We will deliver innovative medicines to patients around the world through product collaborations with global partners, including Roche.
- We will in-license late-stage clinical development assets specifically for the Japan market, including addressing the Japan drug loss and drug lag concerns

Contacts

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