

Supplement Documents for Financial Results Q1 FY12/21

May 14, 2021



To accelerate drug discovery and development of mAb
for therapeutics to overcome current medical unmet-needs

Chiome Bioscience Inc.



- 1. Overview of Q1 FY12/21 “Financial results”**
- 2. Overview of Q1 FY12/21 “Operation highlights”**

Appendix.

- Corporate information**
- Pipeline information**



Overview of Q1 FY12/21 “Financial results”

Financial results: Profit and Loss



(JPY in millions)

	Q1 FY2020	Q1 FY2021	Increase (decrease)	
Net sales	90	246	155	
Drug Discovery & Development	0	103	103	
Drug Discovery Support	89	143	53	<ul style="list-style-type: none">• Growth in business with domestic pharmaceutical companies
COS/SGA	517	401	(115)	
R&D Expense	342	216	(126)	<ul style="list-style-type: none">• Decrease in the cost of study drug manufacturing and CRO in CBA-1205 program
Other costs	174	185	10	<ul style="list-style-type: none">• Up in material costs due to increased business transactions
Operating Loss	(426)	(155)	271	
Ordinary Loss	(424)	(149)	275	
Net Loss	(425)	(160)	264	

Financial results: Balance Sheet



(JPY in millions)

	As of Dec. 31, 2020	As of Mar. 31, 2021
Current assets	3,248	3,293
(Cash on hand in banks)	2,686	2,580
(Other current assets)	562	713
Non-current assets	246	243
Total assets	3,494	3,537
Current Liabilities	342	377
Non-current liabilities	41	41
Total liabilities	384	419
Total net assets	3,109	3,117
Total liabilities and net assets	3,494	3,537



Overview of Q1 FY12/21 “Operation highlights”



Drug Discovery and Development Business

This is business to obtain revenues such as upfront, milestone, and royalty payments relating to out-licensing of patents of pipeline product and drug candidates, and also, income from collaborative research.

Drug Discovery Support business

This is business to obtain revenues from antibody generation service by using platform technology that Chiome possesses to support drug discovery research at pharmaceutical companies, or for diagnostic and research purposes at academia or institutes on fee-for-service scheme.

Drug Discovery and Development -Pipeline



Out-Licensed Product

Code	Target	Therapeutic Area	Basic research, Drug Discovery	Preclinical Study	Clinical Trials	Partner
ADCT-701 (LIV-1205 ADC)	DLK-1	Oncology /ADC				
LIV-2008 /2008b	TROP-2	Oncology				

Pipelines

Project	Target	Therapeutic Area	Basic research, Drug Discovery	Preclinical Study	Clinical Trials	Status
CBA-1205 (ADCC enhanced)	DLK-1	Oncology				Phase 1
CBA-1535 (Tribody™)	5T4×CD3 ×5T4	Oncology				Preparing for Phase 1
BMAA	SEMA3A	DME, Others				Terminated agreement with SemaThera
PCDC	Undisclosed* *to be released	Oncology /ADC				Licensing opportunity
Discovery PJ (5)	Undisclosed	Oncology infectious/rare diseases				—

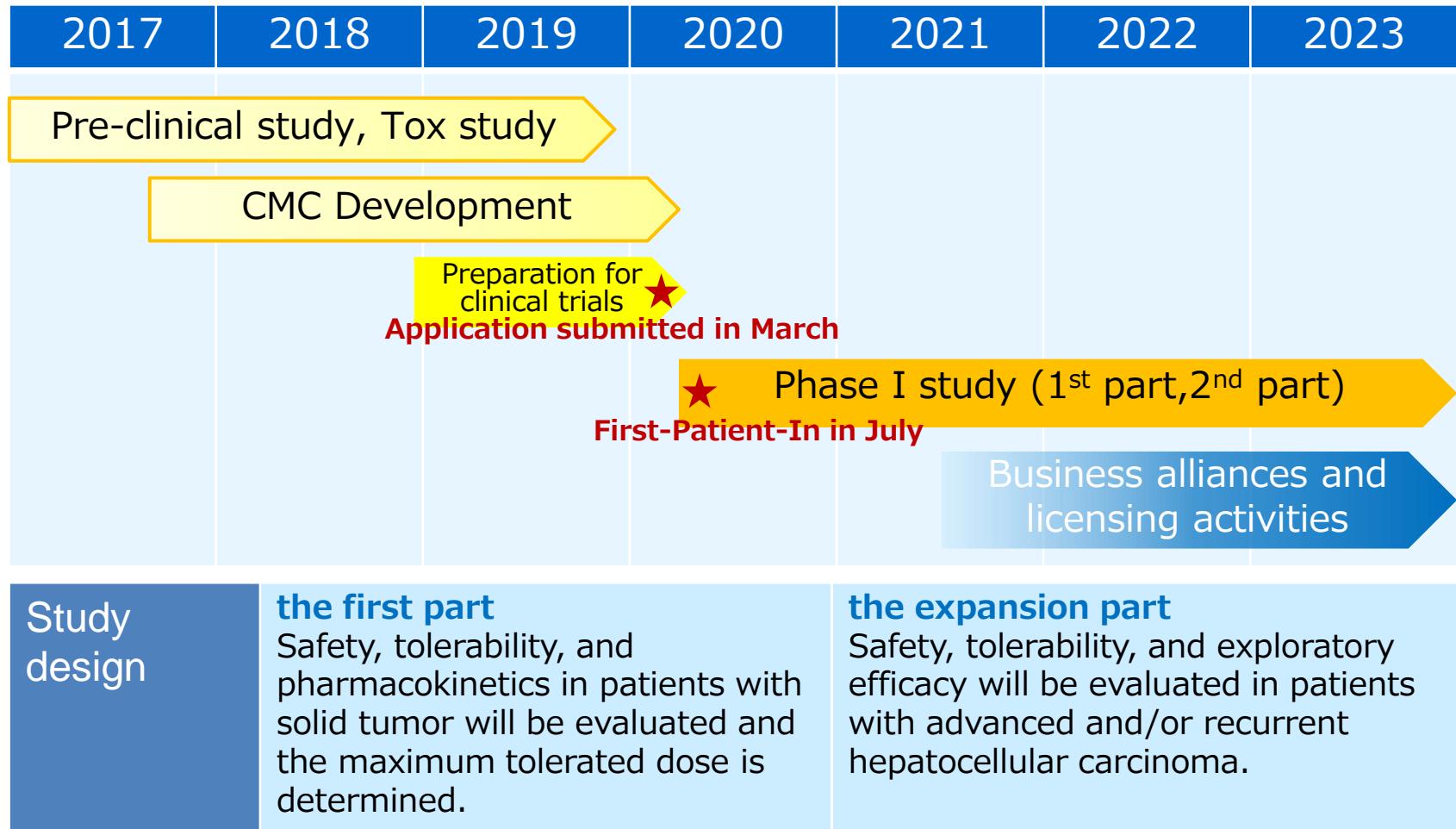
Drug Discovery and Development -Pipeline



CBA-1205 Humanized afucosylated anti-DLK1 antibody	<ul style="list-style-type: none">Dose escalation part of Phase I Study to see safety is on-going well on track at National Cancer Center Hospital.Expect moving to Part 2 in HCC patients in 2nd half 2021.
CBA-1535 Humanized anti 5T4/WAIF1 antibody, multi-specific antibody	<ul style="list-style-type: none">CMC development has been delayed from the initial plan due to the impact of the COVID-19 pandemic.The schedule for the regulatory submission for Phase 1 initiation has not been changed.
BMAA Humanized anti-Semphorin3A antibody	<ul style="list-style-type: none">Collaborative Development License and Exclusive Option Agreement with Sema Thera Inc. was terminated as of May 14.
PCDC undisclosed, to be released	<ul style="list-style-type: none">A new pipeline for ADC purpose in oncology.Initiate licensing work in parallel with basic research.
Discovery PJ	<ul style="list-style-type: none">To expand pipelines; initiate new joint research with potential partner across the world, leverage Tribody technology.
LIV-2008 Humanized anti-TROP2 antibody	<ul style="list-style-type: none">License agreement with Henlius for development, manufacturing and marketing of LIV-2008/2008b and its derivatives in China is signed in January 2021.Ongoing implementation evaluations at multiple overseas pharmaceutical companies
ADCT-701 Out-Licensed Product	<ul style="list-style-type: none">ADC Therapeutics is continuing preparations for an IND.



Phase I study of CBA-1205 is on-going well on track.
Expect moving to the **expansion part** in HCC patients in 2021.



License Agreement with Shanghai Henlius Biotech, Inc. for LIV-2008/2008b development and commercialization

- ✓ Chiome grants an exclusive license, with sublicensing rights, to Henlius for development, manufacturing and marketing of LIV-2008/2008b and its derivatives in China (including Hong Kong Special Administrative Region, Macau Special Administrative Region, and Taiwan region) Chiome also grants to Henlius an option right to develop, manufacture and sale in the rest of the world other than the initial territory.
- ✓ In case Henlius exercises the option rights as described above, the total value of the agreement which Henlius shall pay to Chiome will be 122.5 million USD.
- ✓ After the launch of LIV-2008/2008b or related products (Product), Chiome is eligible to receive royalties according to Henlius's amount of sales of the Product.

About Henlius

Henlius, a subsidiary of the international conglomerate Fosun Group, is listed on the Stock Exchange of Hong Kong Limited (SEHK:2696). Henlius is principally engaged in the R&D production and sale of monoclonal antibody (mAb) drugs and the provision of related technical services (except for the development and application of human stem cells, genetic diagnosis and therapy technology) and the transfer of its own technology and provision of the related technology consultation services.



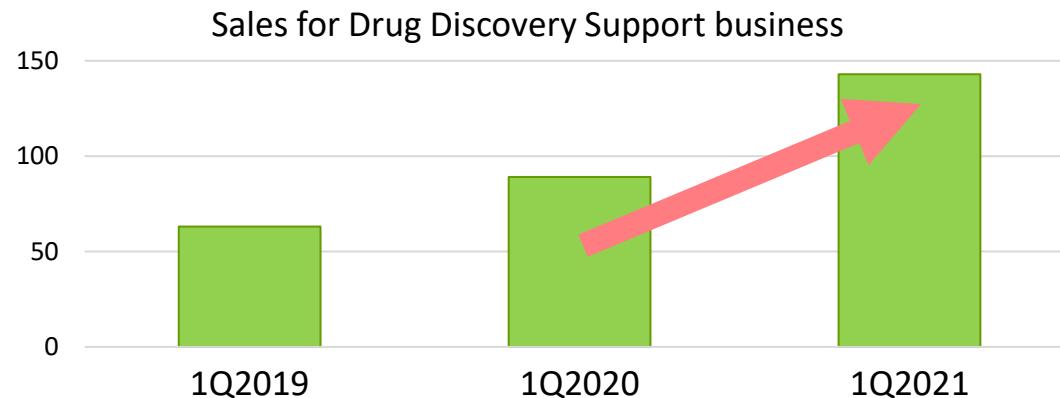
Termination of Collaborative Development License and Exclusive Option Agreement with Sema Thera Inc.

- ✓ On 14 May 2021 Collaborative Development License and Exclusive Option Agreement with Sema Thera Inc. for anti-Semaphorin 3A antibody, which had been signed on 22 March 2018, was terminated.
- ✓ Chiome and SemaThera have been collaborating in the research of potential use of Semaphorin 3A inhibitors in diabetic macular edema under the exclusive agreement for 3 years.
- ✓ SemaThera will continue research and development of Sema 3A inhibitors in ophthalmology area and Chiome regains full rights to anti-Semaphorin 3A antibody for further development and licensing in all fields.



Sales increase in contract service

- Sales increased by 59% year-on-year due to growth of business with key clients in Japan.



<Major clients>

	Contract date
Chugai Pharmaceutical Co., Ltd.	Jun. 2011
Chugai Pharmabody Research Pte. Ltd	Aug. 2012
Mitsubishi Tanabe Pharma Co., Ltd. TANABE RESEARCH Laboratories U.S.A., Inc.	Dec. 2016
Ono Pharmaceutical Co., Ltd.	Oct. 2018
Kyowa Kirin Co., Ltd.	Jul. 2019



Execution of the **Collaborative Research Agreement** with Mologic Ltd. for antibody discovery and development

- ✓ Collaborative Research Agreement for antibody discovery and development for diagnostic use with Mologic Ltd. was conducted May 14, 2021. Under this Collaborative Research Agreement for up to 1 year, Chiome will generate antibodies against several targets for use diagnostic biomarkers utilising ADLib® system and Mologic will evaluate the antibodies by its technology and know-how for application of diagnostic test.
- ✓ Chiome will receive research fees from Mologic, and royalties if Mologic receives profits from the diagnostic products including antibodies generated by Chiome under the agreement.

Mologic Ltd.

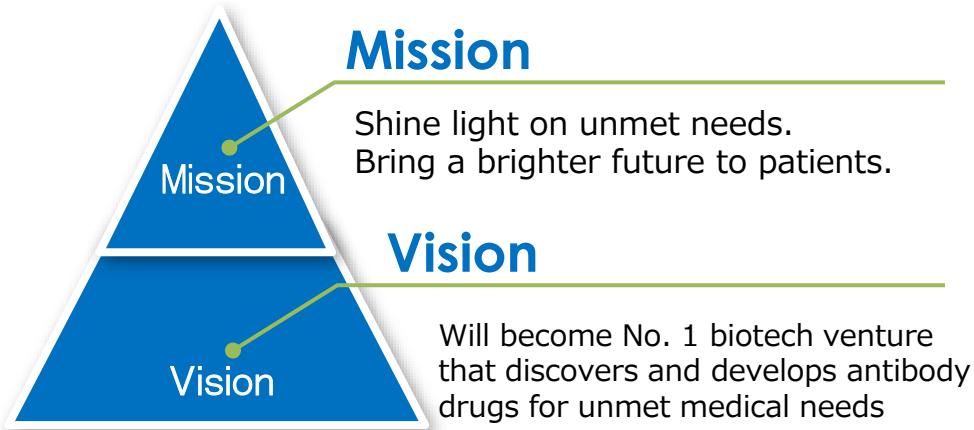
Mologic, headquartered in Bedfordshire, UK, is a leading developer of lateral flow and rapid diagnostic technologies, products and services. They are providing fast, reliable and accurate point-of care diagnostic. In the field of infectious disease, one of their focuses, they contributes and has great track records on global public health by developing and delivering diagnostic products for the regions where infectious diseases like Dengue fever are still a serious threat to human health. (<https://mologic.co.uk/>)



Appendix. Corporate information



Biotech company dedicating to satisfy unmet medical needs



Management principle

- Place the highest priority on sound management and credibility and aim to become a corporation that grows with society.
- With creativity and science, develop therapeutic drugs for unmet medical needs, and contribute to the health of patients.
- Achieve successive product pipelines and improvement of corporate value through collaboration with external institutions.

- Founded: February 2005
- Listed on the stock exchange: Dec.2011 (Tokyo Stock Exchange Mothers Section)
- President and Chief Executive Officer: Shigeru Kobayashi, M.E.
- Location :
<Head Office and Research Laboratories>
3-12-1 Honmachi, Shibuya-ku, Tokyo
<Drug Discovery Laboratories>
2-13-3 Nogawahonchou, Miyamae-ku,
Kawasaki-city, Kanagawa
- Number of Employees : 59 (As of April.30,2021)
- Business : Chiome Bioscience (4583.T), is a public company leveraging a proprietary monoclonal antibody generating technology, for drug discovery and development, as well as providing drug discovery supports.

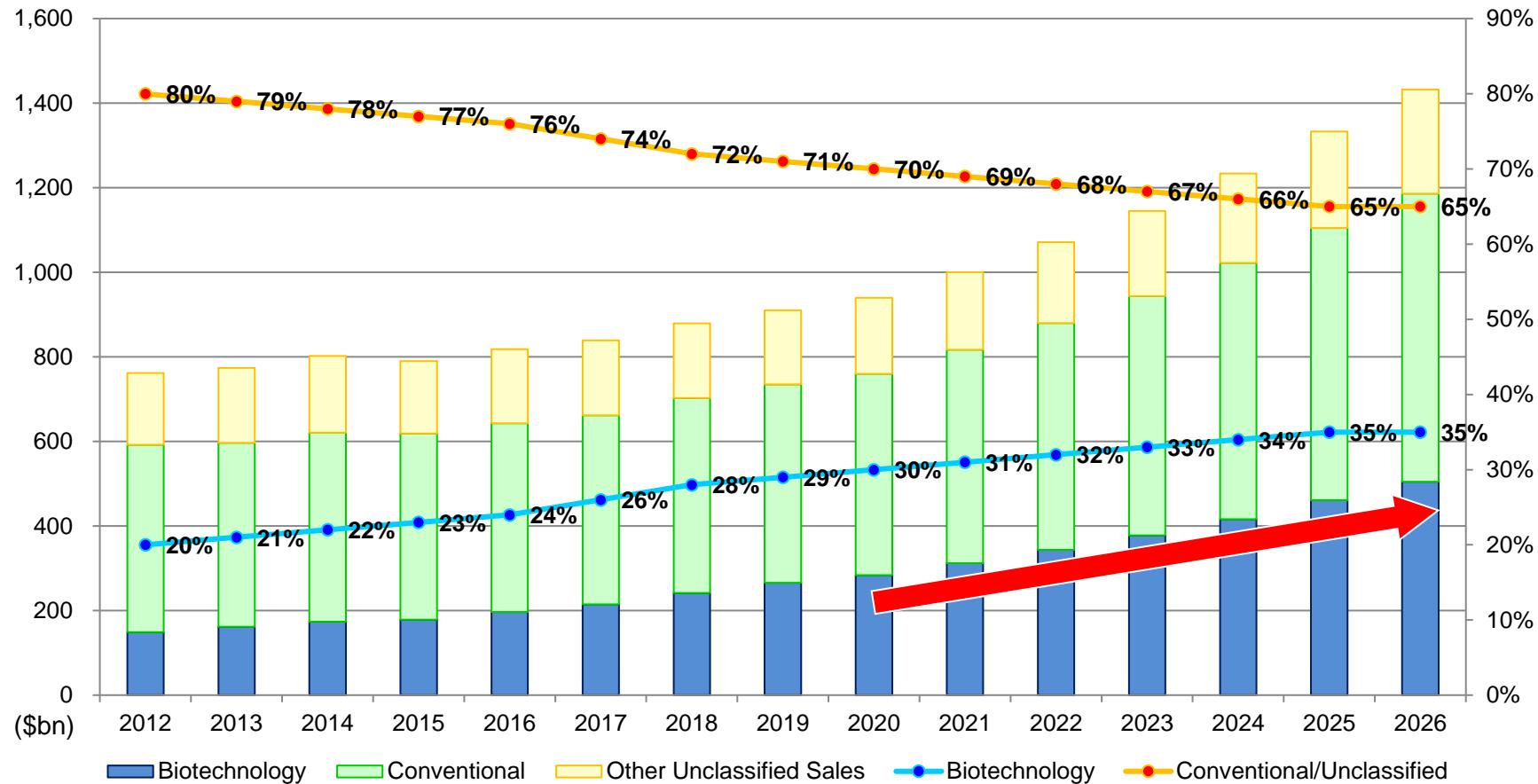




Global Pharmaceutical Market Trends



Biotechnology, mainly antibody drugs driving growth in market



EvaluatePharma® World Preview 2020, Outlook to 2026

Leading antibody drugs



7 antibodies in the top 10 selling drugs worldwide

Sales ranking of prescribed drugs (2020)

NO	Product	Company	Main indication	Modality	Sales (\$mil.)
1	Humira	Abbvie/Eisai	Rheumatoid arthritis	Antibody	20,389
2	Keytruda	Merck	Oncology	Antibody	14,380
3	Eylea	Regeneron/Bayer/Santen	Age-related macular degeneration	Recombinant protein	8,360
4	Stelara	J&J	Psoriasis	Antibody	7,975
5	Opdivo	Ono/BMS	Oncology	Antibody	7,888
6	Enbrel	Amgen/Pfizer/Takeda	Rheumatoid arthritis	Recombinant protein	6,346
7	Trulicity	Eli Lilly	Diabetes	Peptide	5,377
8	Avastin	Roche	Oncology	Antibody	5,321
9	Ocrevus	Roche	Multiple sclerosis	Antibody	4,612
10	Remicade	J&J/Merck/Mitsubishi Tanabe	Rheumatoid arthritis	Antibody	4,511

(Source) : Nikkei Biotech Online, partially edited

Differences between antibody and small molecule drugs



Antibody drug is a product of biotechnology

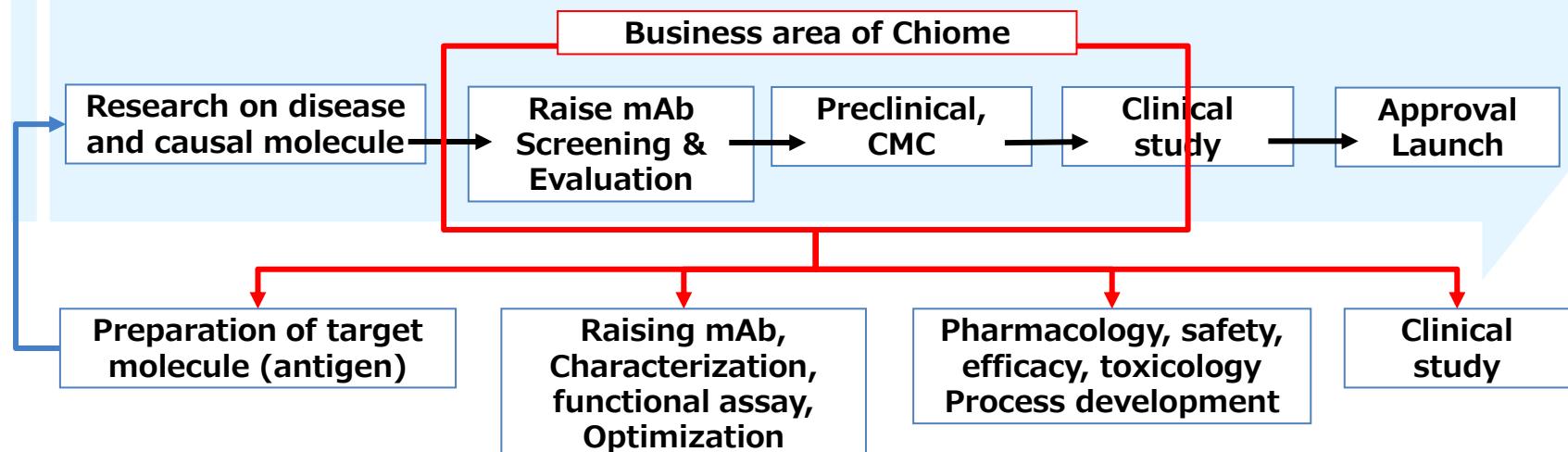
	Antibody	Small molecule
Side effects	Antibody, in general, are safe and causes less side effect, since it specifically targets cells and tissues relating to the disease, but not normal cells and tissues.	It is safe and harmless when they are used according to the approved condition.
Efficacy	Antibody directly attacks targets or signals that causes the disease, i.e., antibody aims for cure of the disease, not supportive care.	Drugs, particularly molecularly targeted drugs, are designed to directly attack targets or signals that causes the disease, i.e., it aims for cure of the disease, not supportive care. Small molecule drugs are often used as supportive care such like a painkiller.
Administration route	In general, injection and infusion at a hospital and clinic (Self-injection is available in some cases)	Injection, Oral, dermal, nasal, or topical, etc. Many of those can be taken at home under physician's instruction.
PK	Longer half-life in serum, which allows less frequent dosing such as weekly or monthly.	Relatively short half-life in serum. In some cases, daily dosing, 2-3 times a day, are required.
Target specificity	High (It's an essential concept of antibody)	Depends on the drug
Manufacturing process	Culture of microorganism or animal cells	Chemical synthesis, Culture of microorganism



Antibody drug discovery for diseases where high unmet medical needs exist

- Intractable diseases for which effective treatment is not available
- Diseases for which some treatments are available, but not a drug
- Effective drugs are available, but are not easy to use or accompanies with hard side effects
- Difficult for a big pharma to focus on due to small number of patient

Process of drug discovery



Groups responsible for the roles above

Protein Group

Antibody Discovery

Antibody Discovery
Labs.

Clinical
Development

Core competence for developing business



Technology Platform (Chiome's mAb Discovery Engine)

Preparation of recombinant proteins

Expression 

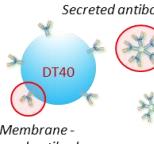
Recombinant proteins 

Purification 

Membrane proteins 

MAb Generation Platform

ADLib® system 

Secreted antibody 

Membrane-bound antibody 

Animal immunization 

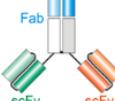
B cell cloning 

Hybridoma 

MAb Engineering

Affinity maturation 

Functional evaluation 

Multi-specific antibody 

Lab-scale mAb production 

Chiome possesses antibody platforms including its proprietary technology, and extensive know-hows and experiences in protein/antibody engineering to streamline the process of drug discovery.

Advantage

Leveraging technology platforms to promote both Drug Discovery and Drug Discovery Support Businesses to Generate Sustainable Profits

Drug Discovery and Development

Development of therapeutic drug and diagnostic agent

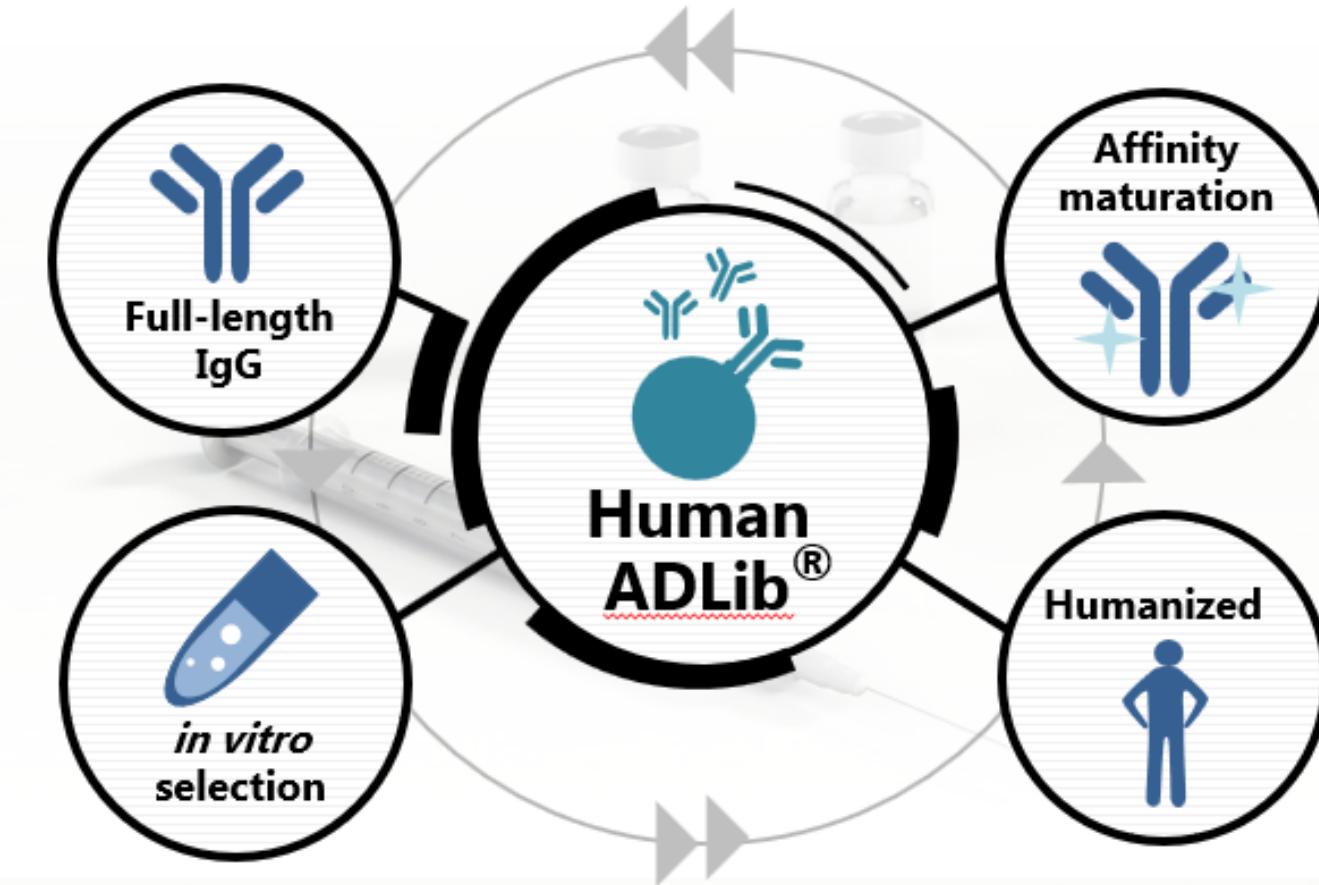
Drug Discovery Support

Contract service for drug discovery

Core technology : Human ADLib®System



One-stop-order platform for antibody drug discovery

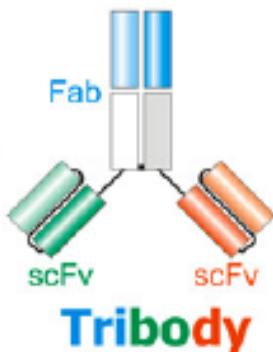


The ADLib®system offers a platform library with unique array space that adds seamless Affinity maturation function. It is a one stop order drug discovery and research tool that can complete all the steps necessary for antibody drug discovery such as selection, full-length IgG expression, humanization, and affinity maturation on 1 platform.

Core technology : Tribody™

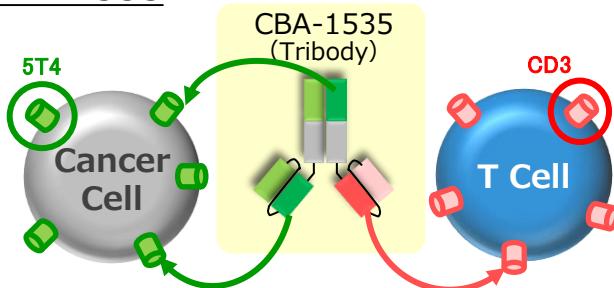


Tribody™



[Discover drug candidates utilizing Tribody technology](#)

CBA-1535



The Tribody technology enables the generation of multi-specific antibody products. This unique technology overcomes the key shortcomings of conventional mono- as well as of currently developed bi-specific antibody formats.

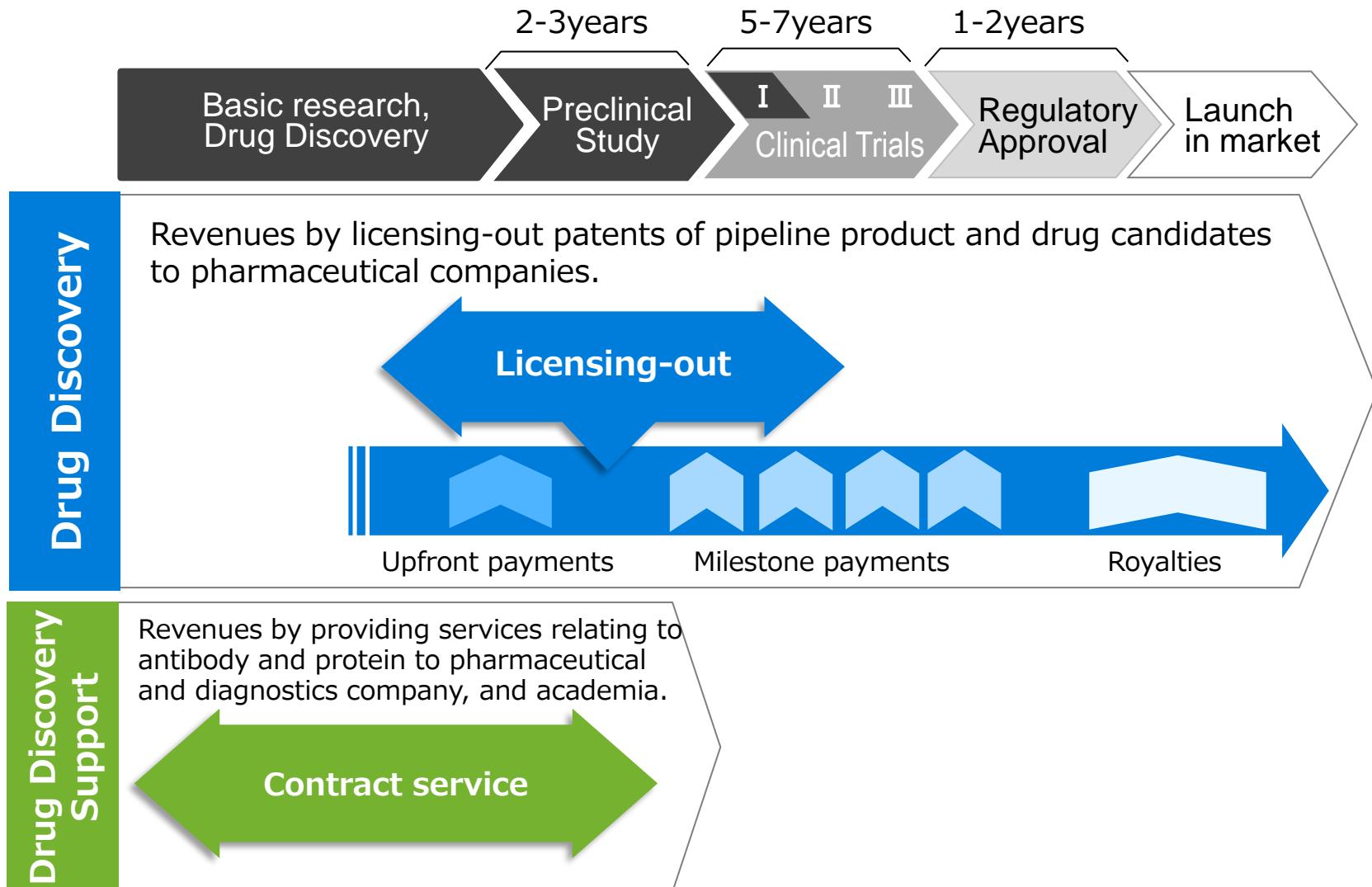
One of the binding sites can be designed to recruit immune cells (effector cells) with cytotoxic activity, such as T cells and NK cells, and the remaining 2 sites can be designed to bind to different epitopes of a cancer-specific antigen or to recognize different antigens expressed on the cancer cell surface.

Tribody™ enables creation of unique antibody by building multi-binding sites that bind to different antigen or epitope, which differentiate from conventional antibody. Chiome strives for developing an antibody drug with greater safety and higher efficacy.

Revenue Model



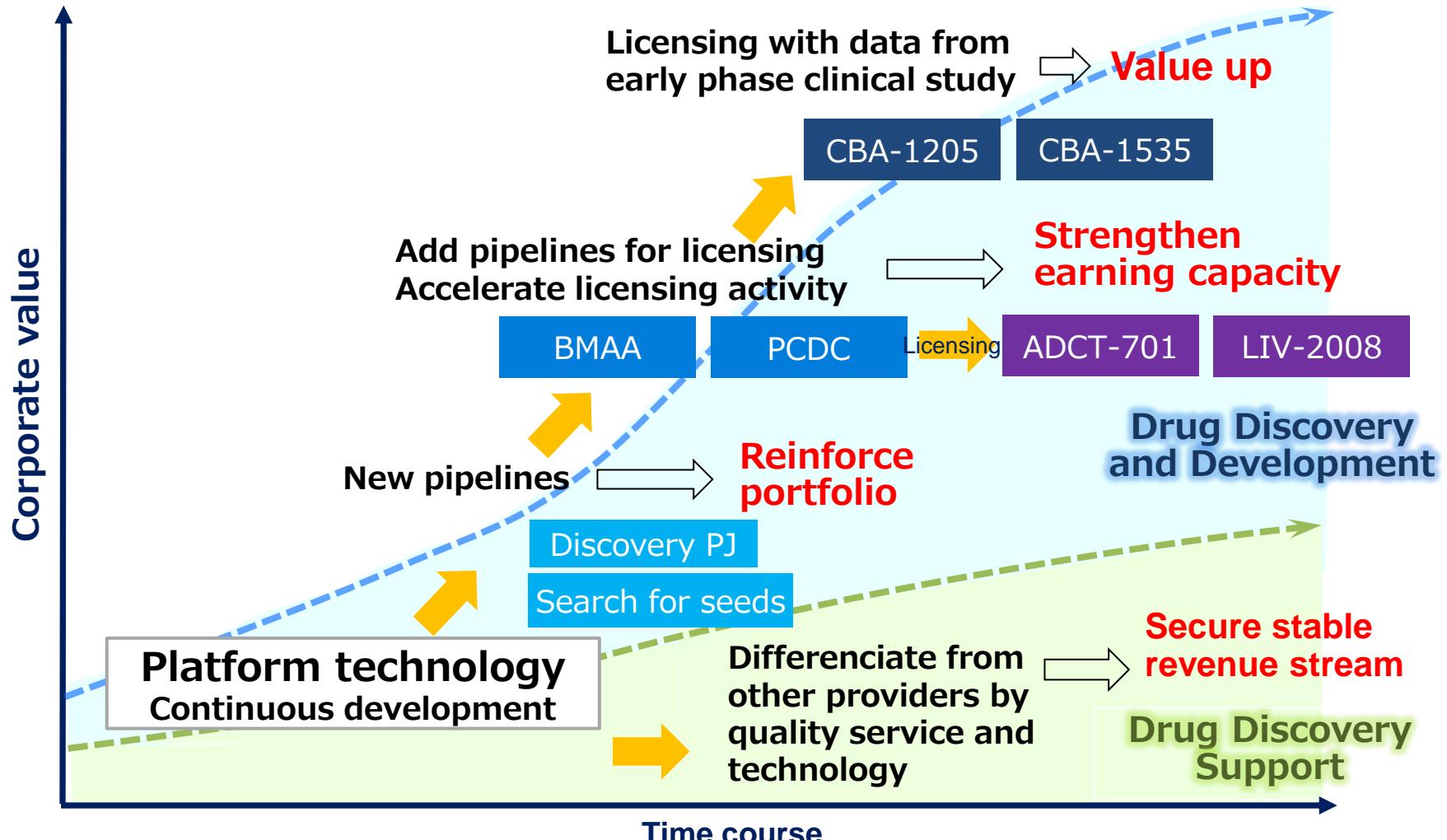
Drug development process and Chiome's revenue model



Business strategy for the future growth



Create candidate of innovative antibody drugs for unmet medical needs and pay maximum efforts to increase the corporate value by developing and licensing highly valuable antibodies.





Appendix. Pipeline information

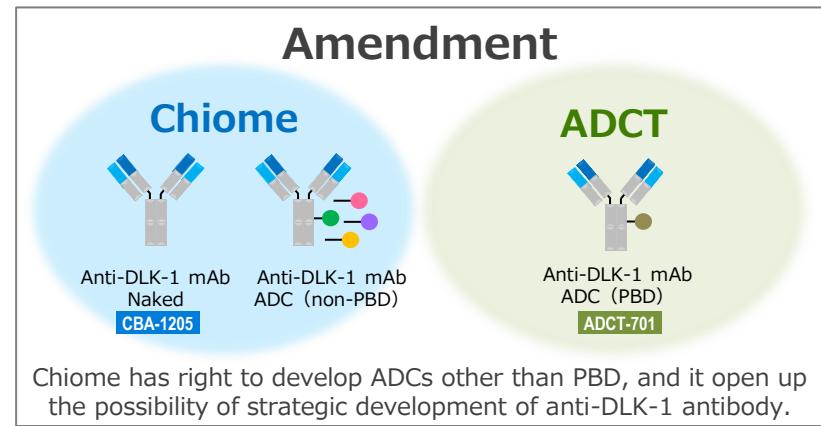


ADCT-701* (Humanized anti-DLK1 antibody ADC)



Therapeutic Area	Liver cancer, lung cancer, neuroblastoma etc.
Origin	An Antibody Drug Conjugate (ADC) form of LIV-1205 that was licensed out to Switzerland-based ADC Therapeutics SA in September 2017.
Patent	Granted in Japan, US, EU, China etc. (Humanized anti-DLK1 antibody)

- ✓ Under the License Agreement, Chiome granted ADCT a worldwide exclusive license with a right to sublicense, develop, manufacture, and commercialize an ADC format of LIV-1205, which is coded "ADCT-701".
- ✓ With the amendment executed in November 2020, Chiome obtains greater flexibility in advancing strategic drug development of anti-DLK-1 antibody, also increase the licensing opportunity and business potential of CBA-1205.
- ✓ ADCT has completed pharmacology and toxicology studies required for an IND submission and is continuing preparations for an IND.





LIV-2008 (Humanized anti-TROP2 antibody)



Therapeutic Area	Breast cancer (TNBC), lung cancer, colorectal cancer etc.
Expectation	LIV-2008 is a humanized monoclonal antibody targeting cell surface antigen "TROP-2" which is overexpressed in breast cancer, colon cancer, lung cancer and several types of solid cancers and also expected to play a key role in the proliferation of cancer cells.
Patent	Granted in Japan, US, EU, China etc.

- ✓ Chiome grants an exclusive license, with sublicensing rights, to Henlius for development, manufacturing and marketing of LIV-2008/2008b and its derivatives in China (including Hong Kong Special Administrative Region, Macau Special Administrative Region, and Taiwan region)
- ✓ Chiome also grants to Henlius an option right to develop, manufacture and sale in the rest of the world other than the initial territory.

(Henlius社HP : [HKEX-EPS 20210114 9583899 0.PDF \(windows.net\)](https://www.hkex.com.hk/eng/securities/listed-companies/20210114/9583899_0.PDF))



CBA-1205 (Humanized afucosylated anti-DLK1 antibody)

First in class

Origin	A humanized antibody generated by hybridoma technology in Livtech which Chiome acquired in 2015.
ADCC	GlymaxX (ProBioGen)
Therapeutic Area	Liver cancer, lung cancer, neuroblastoma etc.
Expectation	First-in-class therapeutic antibody targeting intractable cancers Providing new therapeutics for highly malignant tumors without effective therapeutic drugs including hepatocellular carcinoma.
Patent	Granted in Japan, US, Europe, China etc.

- ✓ The first patient has been dosed CBA-1205 in First-in-Human Phase 1 study in July 2020.
- ✓ Dose escalation part of Phase I Study to see safety is on-going well on track at National Cancer Center Hospital.
- ✓ Expect moving to Part 2 in HCC patients in 2nd half 2021 Implementation of combination study with anticancer drugs for CBA-1205 and file patent applications.

Market analysis of Liver Cancer



No. of patient ^{※1}	840,000 new cases worldwide in 2018 The second leading cause of cancer-related deaths. High incidence in Africa and Asian region.
DLK-1 expression ^{※2}	Ca.20% of liver cancer patients and ca. 50% of lung cancer patients express DLK-1
Standard treatment ^{※3}	<p>Surgery is the first choice if it is resectable</p> <ol style="list-style-type: none">1. Surgery : Resection of tumor2. Ablation : percutaneous ethanol injection, Radiofrequency ablation3. Embolization <p>Drug therapy is applicable for post-surgery, unresectable advanced stage.</p>
Competitor	Sorafenib, Lenvatinib, Atezolizumab - Bevacizumab
Market	Combination therapy of anti-PD-L1 antibody and anti-VEGF antibody was approved in September 2020.

※1: <http://www.wcrf.org/int/cancer-facts-figures/data-specific-cancers/liver-cancer-statistics>

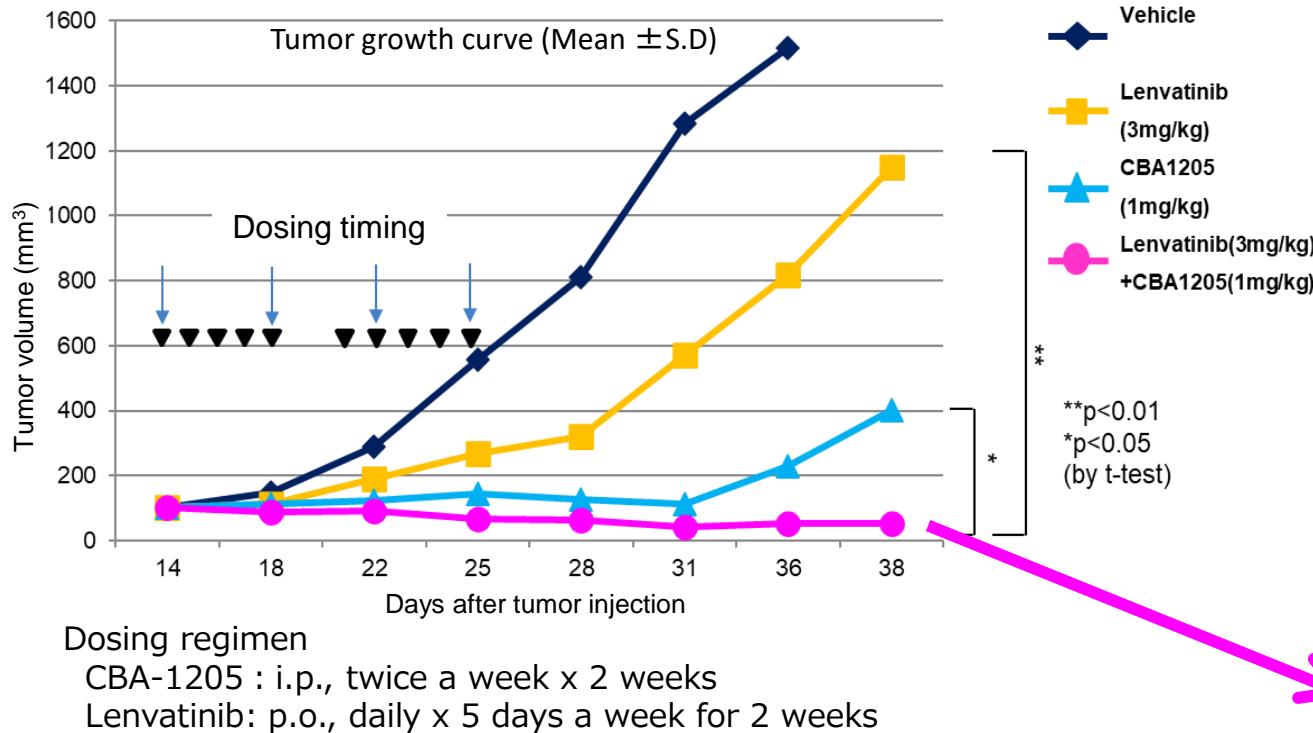
※2: J. Biochem.: 148, 85-92 (2010)

※3: <https://ganjoho.jp/public/cancer/liver/treatment.html>

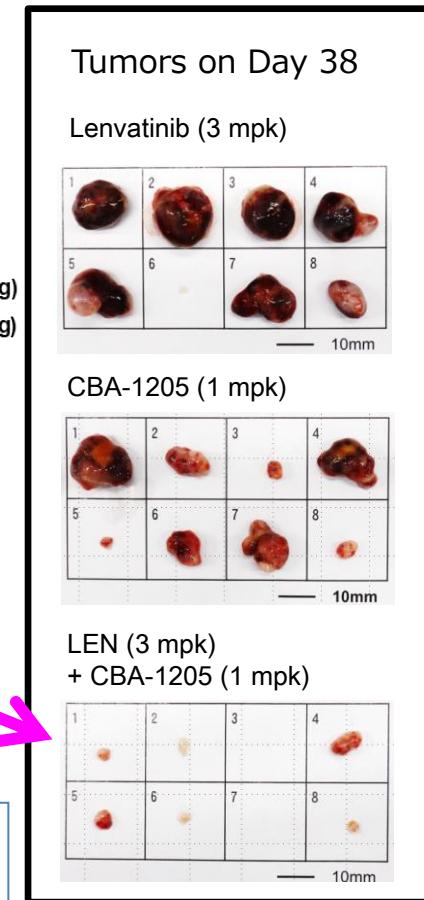


A patent application, “Combination of CBA-1205 and Lenvatinib” filed in 2019 is published

Mouse xenograft study: Hep3B hepatoma model CBA-1205 + Lenvatinib



Patent: WO/2020/204033



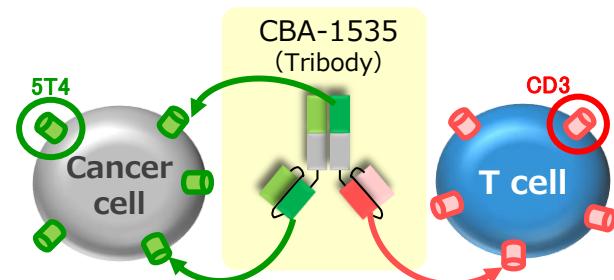
Remarkable tumor regression was observed in combination of CBA-1205 and Lenvatinib in HCC xenograft treatment model.



CBA-1535 (Humanized anti 5T4 antibody, multi-specific antibody)

Origin	CBA-1535 is a T-cell engager, trispecific antibody, directed against the 5T4 tumor antigen, a protein found on various solid tumors and is thought to be involved in metastasis.
Therapeutic Area	Malignant mesothelioma, small cell lung cancer, non small cell lung cancer, TNBC etc.
Expectation	First-in-class therapeutic antibody with tri-specific format Offer a new treatment option for a disease which has poor prognosis and where there is only few effective treatment.
Patent	Granted in Japan, UK, US. Pending in Europe etc.

- ✓ Regulatory submission for Phase 1 initiation is expected at the end of 2021 or later. However, due to the pandemic of COVID-19 in the UK, study in Japan should be considered as an alternative plan.
- ✓ CMC development has made progresses on schedule to date, however, there is some uncertainty for the future schedule due to COVID-19 pandemic in Europe. Situation needs to be watched carefully.





BMAA (Humanized anti-Semaphorin3A antibody)

First in class

Origin	A humanized antibody generated using the ADLib® System. Demonstrated as a selective antibody possessing functional inhibitory activity through collaboration with Professor Yoshio Goshima in Yokohama City University.
Therapeutic Area	Diabetic macular edema (DME)
Expectation	To be applied in a wide range of disease areas including inflammatory and CNS diseases which involve SEMA3A. Providing treatment methods for patients who do not respond to traditional therapeutics for diabetic retinopathy, which is the primary medical condition causing loss of sight in adulthood.
Patent	Granted in Japan, US and Europe etc.



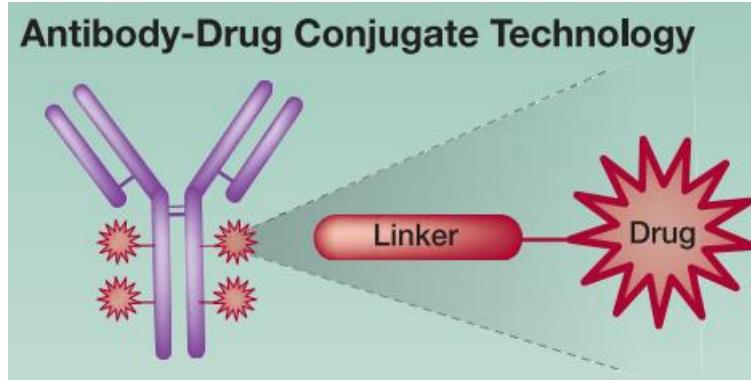
PCDC : anti-X antibody for Antibody Drug Conjugate format

First in class

- Target-X : The first in-class target molecule. X is overexpressed in breast cancer, colon cancer, lung cancer and several types of solid cancers, including those resistant to standard therapies.
- Anti-Target-X humanized antibody : Broad Coverage and Safety Based on Binding Properties and Toxicity Profile



**Patent applications have been filed,
started activities to derive ADC applications.**



Element	Preferred feature
Target	✓ High Grant in Aid for Cancer Research isomerism (responds to cancer cells but not normal cells)
Antibody	✓ Rapidly internalized and degraded and degraded by lysosomes
Linker	✓ Stable and less nonspecific degradation
Binding	✓ High homogeneity (binding only to specific parts of the antibody)
Efficacy	✓ High cytotoxic activity at low doses



Shine light on unmet needs. Bring a brighter future to patients.

To accelerate drug discovery and development of mAb
for therapeutics to overcome current medical unmet-needs





- Materials and information provided during this presentation may contain so-called “forward-looking statements.” These statements are based on current expectations, forecasts and assumptions that are subject to risks and uncertainties, which could cause actual outcomes and results to differ materially from these statements.
- Risks and uncertainties include general industry and market conditions, and general domestic and international economic conditions such as interest rate and currency exchange fluctuations.
- The Company disclaims any intention or obligation to update or revise any forward-looking statements whether as a result of new information, future events or otherwise.