JSR

JSR Life Sciences

Briefing regarding Life Sciences Business

March 10, 2023 (TOKYO)

Legends

- BPM: Bioprocess Materials
- CRO: Contract Research Organization
- CDMO: Contract Development and Manufacturing Organization
- IVD: in vitro Diagnostics
- CLIA: Clinical Laboratory Improvement Amendments
- PDX: Patient derived xenograft
- CDx: Companion Diagnostics
- cGMP: Current Good Manufacturing Practice
- mAb: Monoclonal antibody
- IND: Investigational New Drug

Agenda

- Summary
- Mid-term Policy for Life Sciences
- CDMO
- CRO

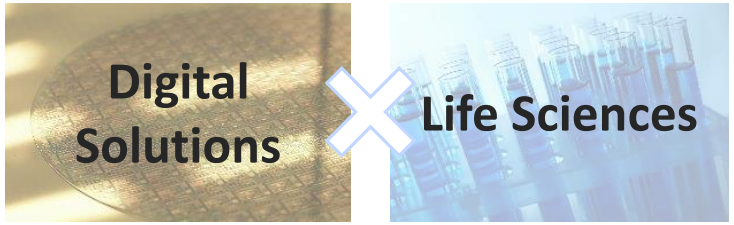
Summary of Management Policy

Vision

- Create value for all stakeholders through **sustainable** growth
- Strengthen the **resilient** business structure by responding to changes in the environment

Business Portfolio

Digital Solutions (especially **SEMI**) and **Life Sciences** as the center of our business portfolio



Business Target

ROE more than **10%**

Core OP **Exceed Prior Peak**

more than 60 billion yen
Digital Solutions &
Life Sciences

Structure

Resilient infrastructure

Innovation
Digitalization
ESG commitment
Employee engagement

Global Leadership Team

Representative Director and CEO
Eric Johnson

JSR Corp BOD

JSR North America Headquarters
(JSR North America Holdings, Inc.)

President of JSR North America Holdings, Inc.
Eric Johnson

JSR Life Sciences Headquarters
(JSR Life Sciences, LLC)

Managing Officer and President of JSR Life Sciences, LLC
Tim Lowery

Chief Technology Officer of JSR Life Sciences, LLC
J.P. Wery

GLOBAL BUSINESS RESPONSIBILITY

Cross Company Collaboration (ARCH Initiative)	Materials for IVD/ Research Reagents	Bio Process Materials	CEO	CEO	IVD/RUO
J.P. Wery	H. Itou	H. Nomura	T. Lowery	A. Spura	K. Yamada
			KBI Biopharma / SELEXIS	Crown Bioscience	MBL






REGIONAL RESPONSIBILITY

US		JSR Micro, Inc.	KBI	CB Int`l, SD	MBL International
EU		JSR Micro NV	KBI (Belgium / Switzerland) / SELEXIS	CB UK	JSR Micro NV
ASIA – JP	JSR Life Sciences Group Companies	JSR Corp.		MBL	
ASIA – CN		MBL Beijing		CB Beijing CB Taicang CB Zhongshan	MBL Beijing MBL Hangzhou MBL Shenzhen

Mid-term Policy for Life Sciences

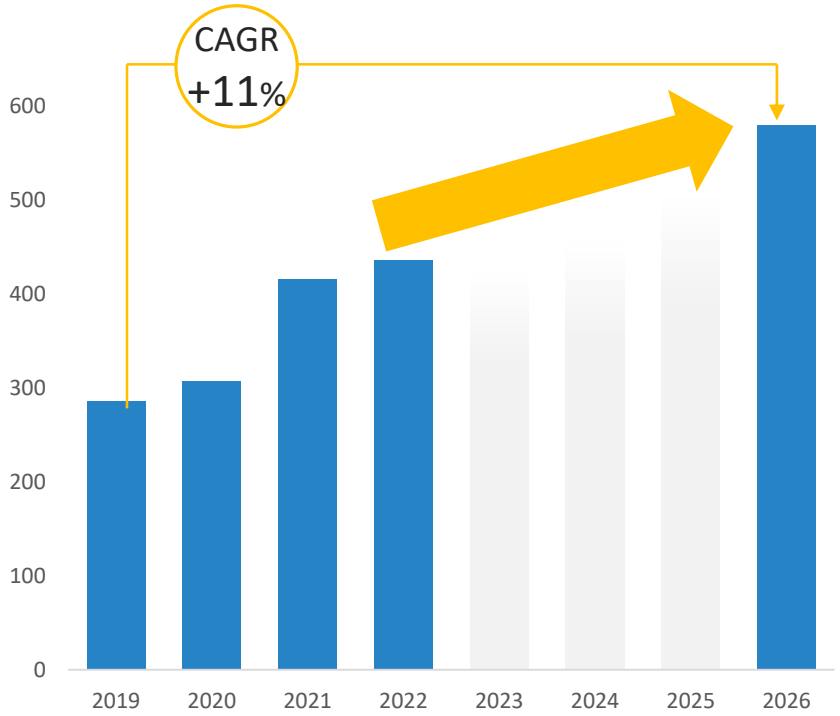
Summary

LS Strategy	**Performance results**	• Over the past few years, sales have grown from 50 billion yen to over 100 billion yen. We have established a competitive position in the biopharmaceutical development space from drug discovery to clinical manufacturing and commercialization.
	Mid term plan (MTP)	• The sales target for FY24 is expected to achieve in FY22. We've completed upfront investment to allow for further growth. With the 20% OP margin target within reach, we will focus our efforts on increasing the efficiency of all businesses.
	Long term vision	• We have started formulating the future business projections for the long-term expansion and value creation for JSR Life Sciences.
CDMO Segment	**Strength**	• Our strength is our technical acumen, which leverages our ability to analyze complex proteins to provide consistent support from non-clinical and early-phase to commercialization of candidate drugs.
	Track record	• The number of development programs, which will be the source of future earnings, increased by +20% YoY, and the order backlog increased by +10% YoY. (As of December 2022)
	Outlook	• The commercial ramp-up of the new KBI facilities is now progressing well, heading towards full production in H2 FY23. We aim to achieve OP 20% during the MTP by controlling cost increases and implementing intensive measures to improve profitability.
CRO Segment	**Strength**	• Market leader position in drug discovery support services in the oncology area. We have advanced disease-related platforms from the world's largest number of PDX models to organoids. Second largest sales sub-segment after CDMO in LS segment. (excl. antigen test kit)
	Track record	• Approx. 40% of new cancer drugs in the US (2021) were provided with Crown's drug discovery support services. Out grew the market by leveraging Crown's distinctive strengths.
	Outlook	• Going forward, we expect double-digit sales growth and stable profit growth. Furthermore, with our recent M&A, we expect to expand our business and regional portfolio, including the biobank business and CLIA business and expansion into the European and Japanese markets.

Life Sciences: Market

Opportunity gets stronger

Biopharmaceutical Market (Bn USD)



* JSR estimated

- Aging society
- Personalized medicine
- Efficiency improvement of drug development

Our playing field gets stronger

JSR Life Sciences in this space

Our Segment

Life Science Services (LSS)

- Key enabler of Pharma market
- ~25-30% of Pharma value pool
- Attractive growth and returns

Our Business

High end services and inputs

- Contract services (CRO, CDMO)
- Materials (purification media, diagnostic kits, beads)

Our Customers

Innovators across the lifecycle

- Bio Pharma
- Virtual Biotech
- Academia

Who We Are

We are committed to become a high-performing life science services (LSS) provider

Vision of JSR Life Sciences

Being **the partner of choice** to innovators by delivering reliable, innovative and technically differentiated **services & products** essential to advancing customers' assets

Mission of JSR Life Sciences

Empower our customers to improve human health.

We do this by engaging the finest scientific talent, upholding the highest quality standards, and relentlessly pursuing innovation.

We strive to **accelerate** and **de-risk** drug discovery & development to help realize a world where **every patient gets the right treatment at the right time**.

Our Portfolio Today

We have built a competitive advantage in the LSS space

Discovery — **Preclinical** — **Clinical** — **On-Market**

Discovery & Diagnostics

CRO (Service)

CROWN BIOSCIENCE

IndivuServ

- **Advanced disease models**, eg. PDX, Organoid and other model platforms
- **Premium oncology sample access service**

IVD (Material/product)

MBL JSR Life Sciences

- "One Stop Shop" services for IVD/**CDx** products in Japan

Bioprocess

CDMO (Service)

KBI BIOPHARMA SELEXIS

- **Complex biologics** process development and manufacturing
- **Advanced modality** development

BPM (Material/product)

JSR Life Sciences

- **Innovative** bioprocessing separation product and service

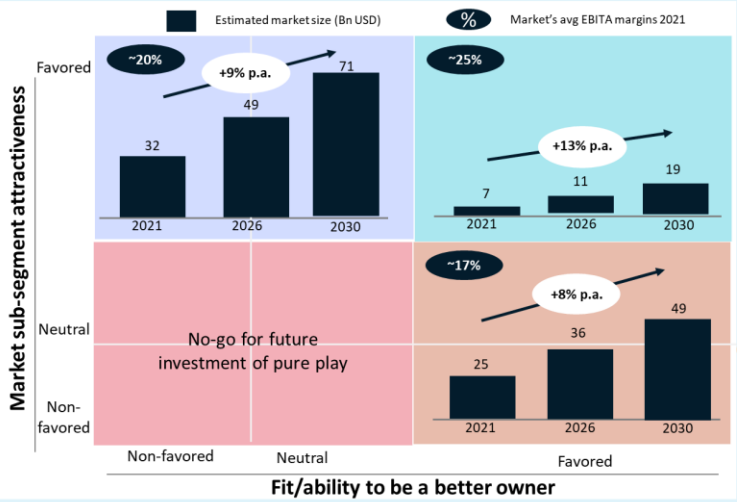
"Right patient, right treatment, and right time"
- Personalized Medicine

Outlook: What is Next

We will stepwise expand our LSS ecosystem to enhance the leadership and double down on creating value from our portfolio

Expansion of ecosystem

- Developed LSS portfolio expansion roadmap
- Prioritization exercise based on market attractiveness and fit to JLS
- Prioritized segments for expansion, worth ~$140 Billions out of ~$300 Billions total LSS market in 2026



SELEXIS

IndivuServ

+

Rigor in value creation

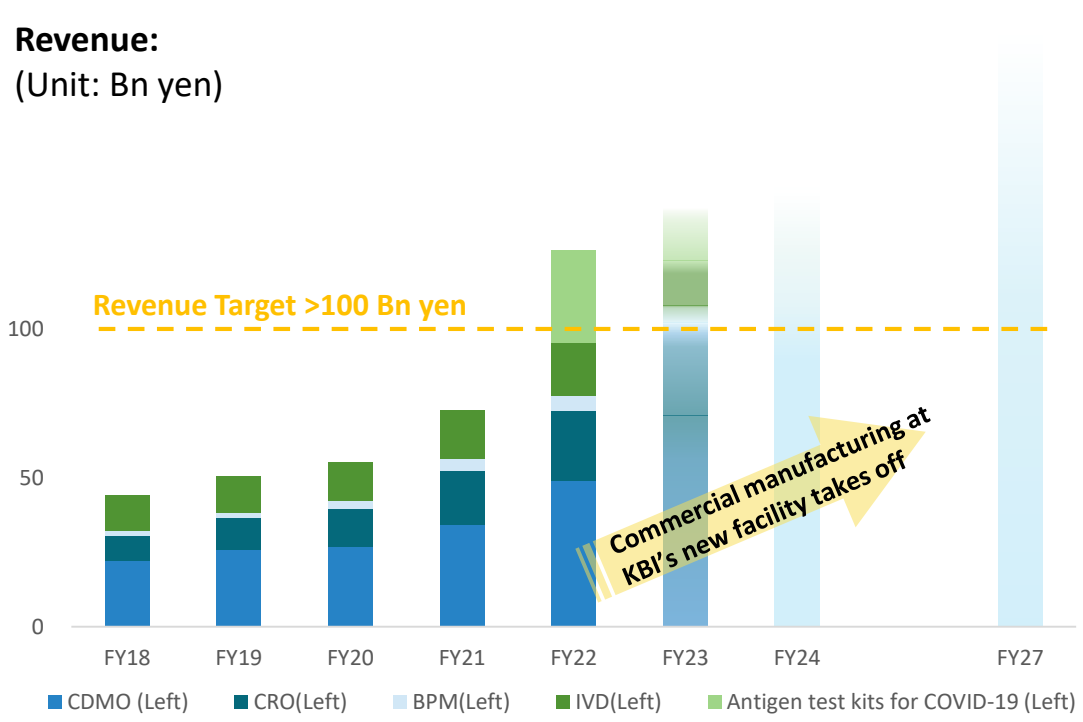
- Disciplined portfolio management and excellence in targeted M&A
- Value-focused (financial) management system to safeguard our resources for growth and innovation
- Upskilling and leverage talent across the ecosystem
- Centralized support to enable affiliates to excel in their core (delivering superior service and innovate their offerings)
- Leveraging JSR Digital capabilities to build value-adding new offerings, service model and customer experience
- Goals and objectives aligned with profitable growth at industry standard for all affiliates

Progress of Business Targets

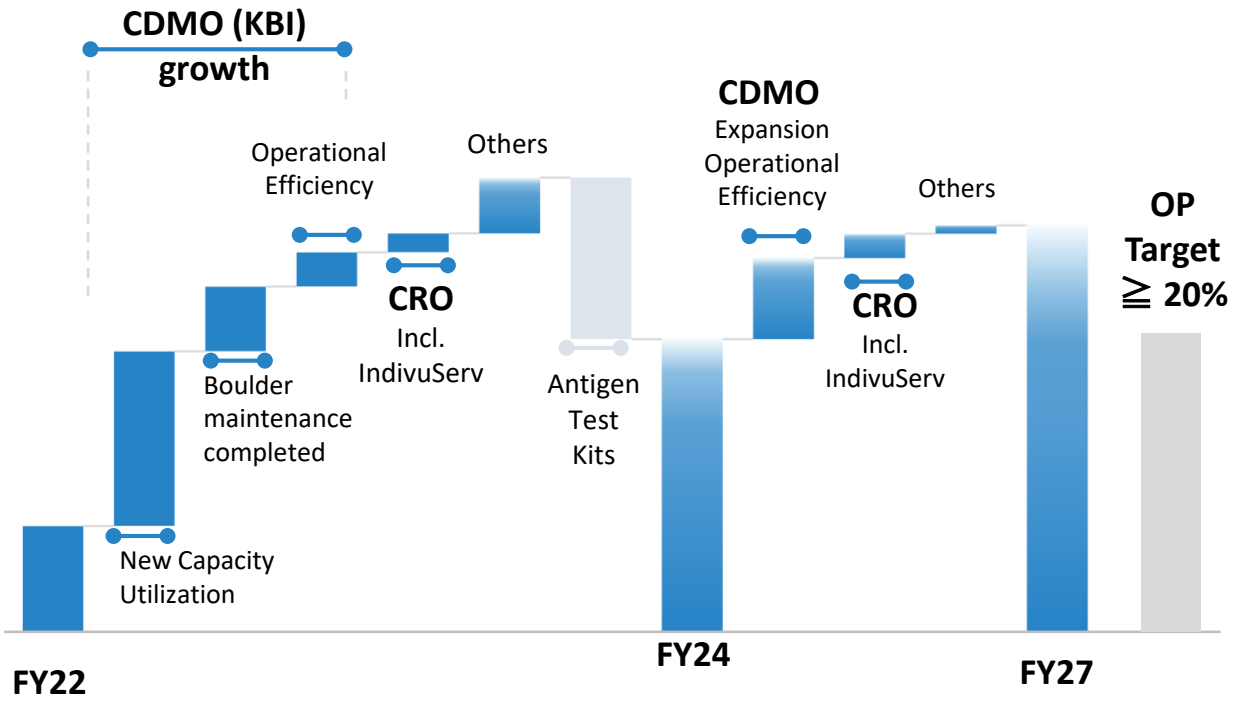
FY24 Target: Revenue growth to > 100 billion yen and achieve more than 20% ROS

- Expected to achieve the revenue target ahead of time in FY22.
- ROS target is within range in FY24 by the takeoff of CDMO's commercial manufacturing and expansion and efficiency gains from overall our portfolio businesses.

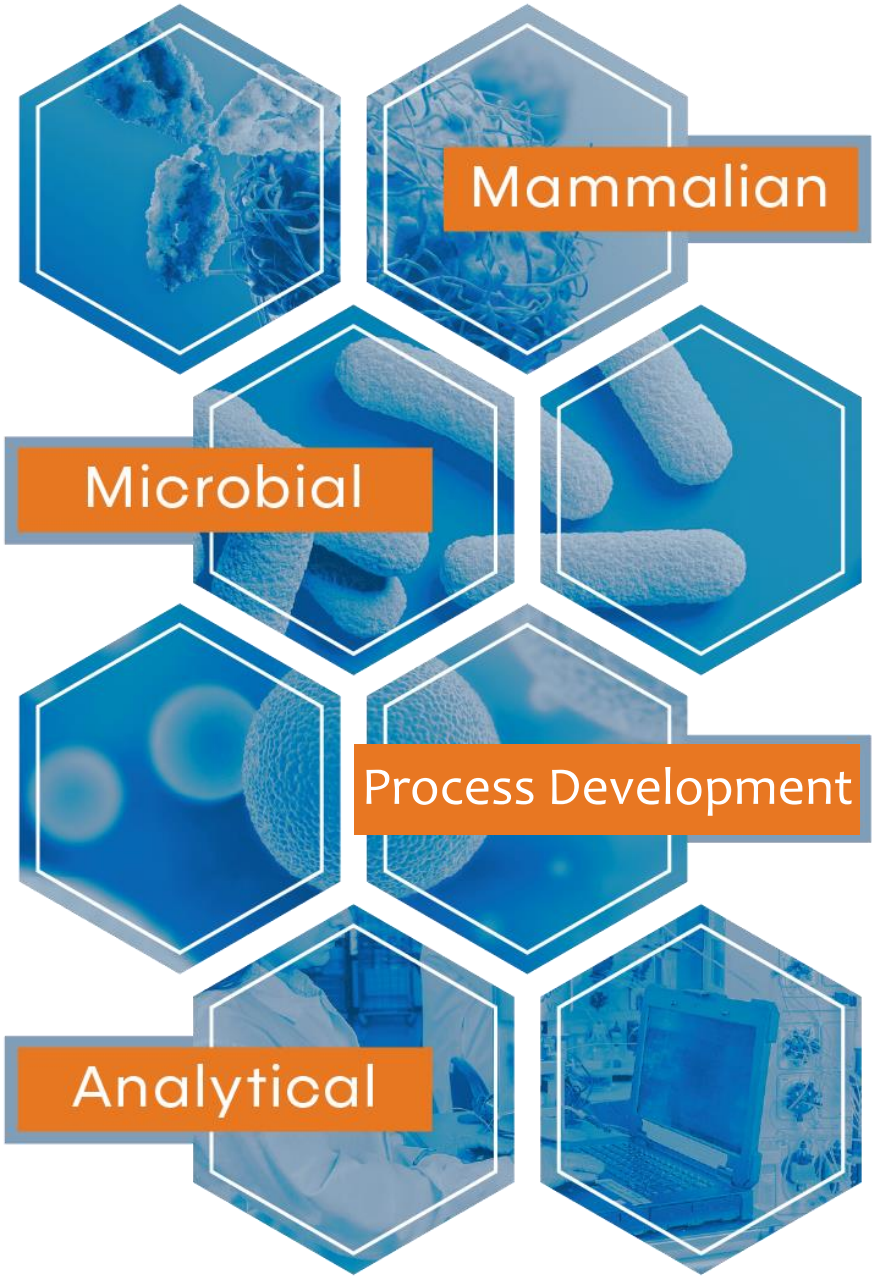
Revenue toward FY24



OP% bridge toward the target



CDMO



- Selexis' specialized high-titer mammalian cell line development technologies and services
- KBI's cGMP bulk drug manufacturing for clinical and commercial requirements

- Cell line development, tox material, clinical, and commercial bulk drug manufacturing
- Unique expertise fixates on manufacturability; enables the expression of "difficult-to-refold" products.

- Extensive immunotherapy experience
- Industry-leading analytical characterization capabilities
- Comprehensive services for autologous and allogeneic cell therapy products

- 3300+ projects completed
- Extensive cell-based assay support and product stability
- Process support from development to validation
- Formulation experience on 100+ molecules; concentration ranges from 1-300 mg/ml
- Industry-leading large molecule particle characterization capabilities

KBI BIOPHARMA

SELEXIS®

17 YEARS

pressure-tested quality systems & rigorous regulatory compliance

Serving Clients in Our Worldwide Facilities

USA, COLORADO
BOULDER, Microbial

USA, COLORADO
LOUISVILLE, Analytical

USA, TEXAS
THE WOODLANDS, Cell Therapy

EUROPE, BELGIUM
LEUVEN, Analytical

EUROPE, SWITZERLAND
GENEVA, Mammalian

KBI BIOPHARMA SELEXIS

Mammalian Facilities Global Network

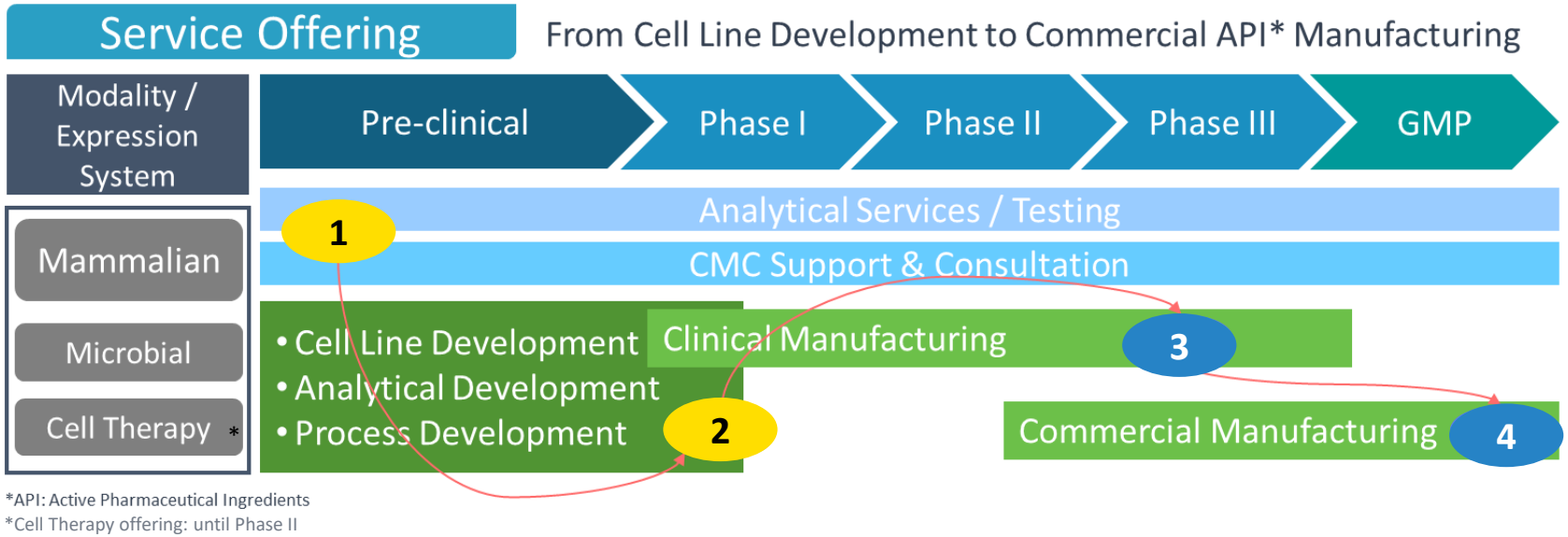
USA, NORTH CAROLINA
CORPORATE HQ, Mammalian

USA, NORTH CAROLINA
VENTURE CENTER, Mammalian

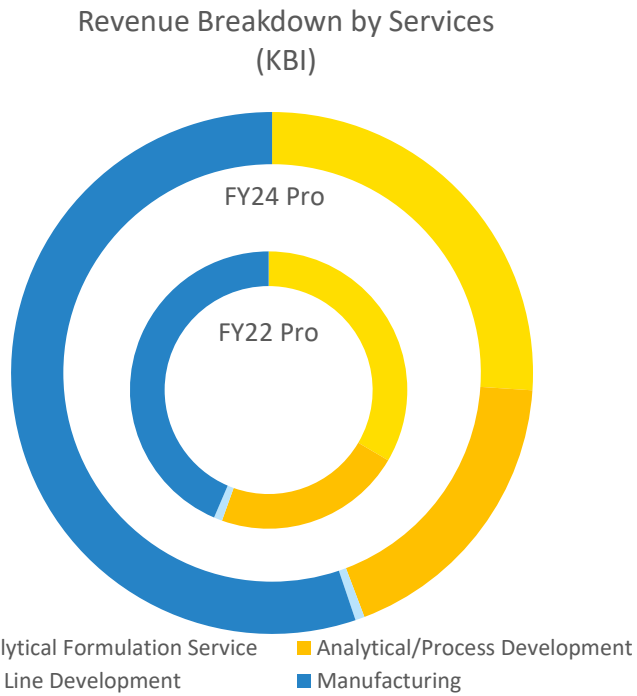
USA, NORTH CAROLINA
PATRIOT PARK, Mammalian
Commercial Manufacturing

KBI's Uniqueness as CDMO

- Strength in Analytical service (protein characterization) and Analytical/Process Development established capability of Clinical/Commercial manufacturing of difficult-to-express molecules
- These capabilities feed into manufacturing programs, which is growing now



*API: Active Pharmaceutical Ingredients
*Cell Therapy offering: until Phase II



1 Analytics Service
2 Analytical/Process Development
3 Cell Line Development
4 Clinical and Commercial Manufacturing

KBI's Origin: Analytical Service

- KBI started as an analytical service provider
- An Industry-Leader in Analytical services has given KBI the strength to deal with difficult molecules.

PERFORMANCE

KBI is The Industry-Leader in Protein Analytics

17 years
Of Leadership in Formulation Development

3300+
Projects Completed

MORE HIGHLIGHTS

Industry leading array of analytical equipment and scientific expertise

- 160+ Formulation development projects to date
- Multiple dosage forms: Intravenous, Subcutaneous, Intramuscular Intravitreal, Topicals
- Product concentrations ranging from 10µg/mL to 300mg/mL
- 200+ active product stability studies
- (GMP & non-GMP)

Experience Across All Biologics

- IgG1
- IgG2
- IgG4
- Bispecific
- IgM
- Fab
- ADC
- Highly Glycosylated Proteins
- Protein vaccines
- PEGylated proteins
- Conjugates
- Peptides
- Polyclonals
- Biosimilars
- Fc and other Fusion Proteins
- Enzymes
- Cytokines
- Growth factors
- AAV

Another Strength: Analytical/Process Development

- KBI has developed the processes for various molecules

Process Development Focus Areas

- **Support upwards of 40-50 programs annually**
- Collaboration with Selexis on >48 programs
- Including PhI - PhIII dev and PC & PPQ support
- **Process development for mAbs, bispecifics, Fc-fusions, and recombinant targets**
- **Platform for mAbs and complex bispecifics**
- 10+ peer reviewed publications

Process Development delivers the process and robustness data needed to enable successful scale up to GMP manufacturing

Cell Line Development

Upstream Process Development

Downstream Process Development

Manufacturing: Best-in-Class End-to-End Mammalian Offering

- Synergy between Selexis and KBI strengthens the mammalian offering

SELEXIS®

- **160+** Clinical Programs
- **10** Commercial Products
- **210** Patents
- **10** Key Technology Launches

8-10

mAb and non-mAb process platforms provide titers of 8-10+ g/L

>40

KBI development and/or GMP manufacturing with >40 Selexis cell lines

KBI BIOPHARMA

- PD Programs **190+**
- Manufacturing Batches **200+**
- INDs per Year **15+**
- Analytical Services Projects **3300+**

Track Record

KBI

- Expanding in both revenue backlog and # of programs, strongly reflecting technical capabilities

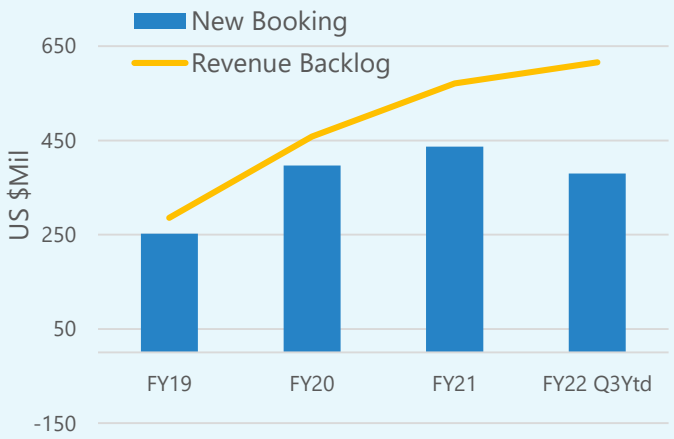
Increasing # of multi-year manufacturing contracts contributed to increased Backlog. New Booking at the end of Q3 FY22 has already reached 85% of FY21 total

Strong increase was seen in mammalian with increased # of Phase 2 and Phase 3 programs

FY22 Q3 YTD Progress vs FY21 full year

Booking 85%* Backlog 110%*

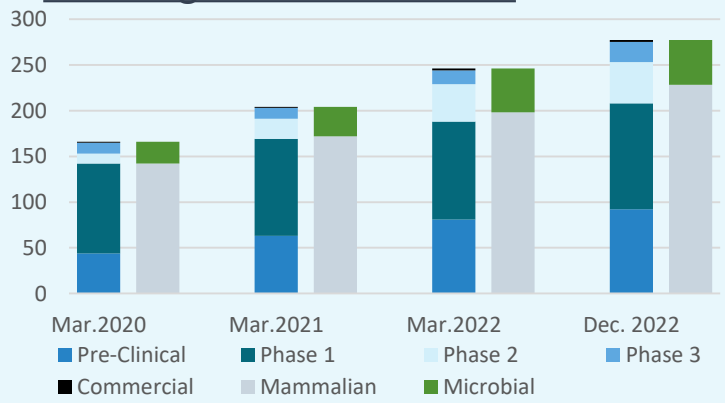
Booking Growth Trend



FY21 Q3 vs. FY22 Q3 +20%*

Cumulative

# of Program Growth Trend



SELEXIS

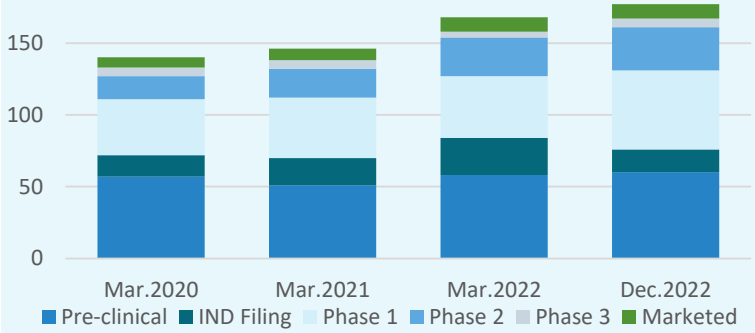
- Constantly increasing # of Commercial Licenses

Commercial license is a potential future revenue source through milestone payment and running royalties

FY21 Q3 vs. FY22 Q3 +10%*

Cumulative

# of Commercial License Pipeline



*Numbers are approximate.

KBI Profitability Improvement

- FY23 marks a turning point with the combination of the successful launch of commercial manufacturing in NC and well managed cost control

Ongoing Objectives

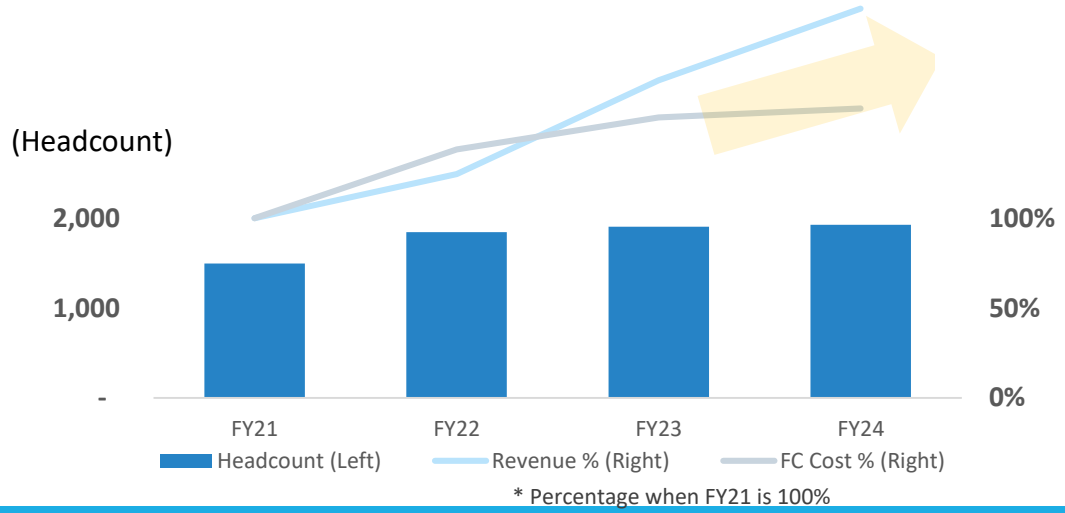
In addition to the successful launch of the commercial manufacturing facility, we are following continuous efforts strengthen the profitability.

1. Ensuring commercial excellence
2. Unlocking operations and filling capacity
3. Improving productivity
4. Optimizing external spending
5. Implementing an enhanced network strategy
6. Collaboration with a leading transformation consulting firm to further drive improvements

These efforts are going to continue throughout MTP period to maximize profitability.

Revenue vs Cost

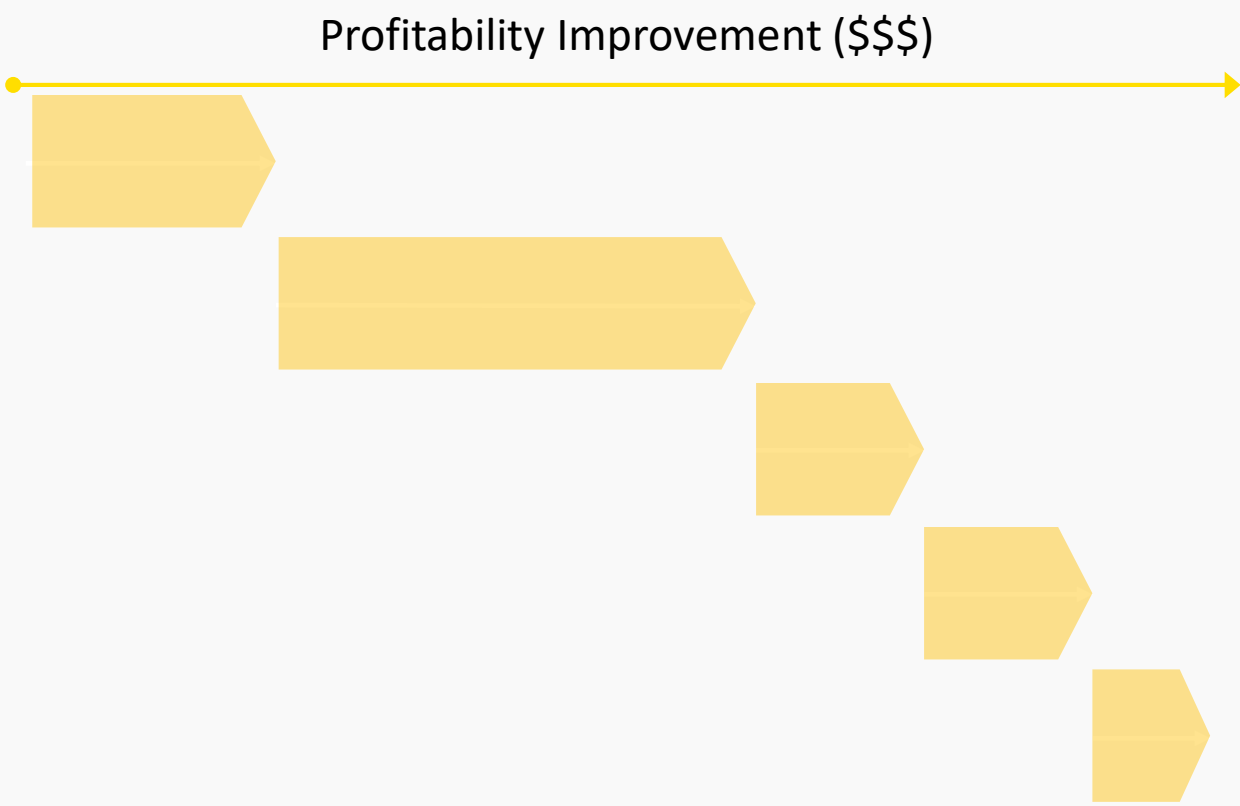
- From FY23, the commercial MFG revenue in NC will grow significantly together with other service growth.
- Staffing level which satisfies the growth has been mostly onboarded in FY22
- Only limited incremental increase in staffing will be required in FY23-24.



Identified items for KBI's Profitability Improvement

- Preliminary analysis has already identified significant number of items for profitability improvement

Area of Improvement	# of Initiatives
Ensure Commercial Excellence	8+
Unlock operations and fill capacity	27+
Efficiency in operating model	6+
External spend	8+
Implement a bold Network strategy	1+
	50+

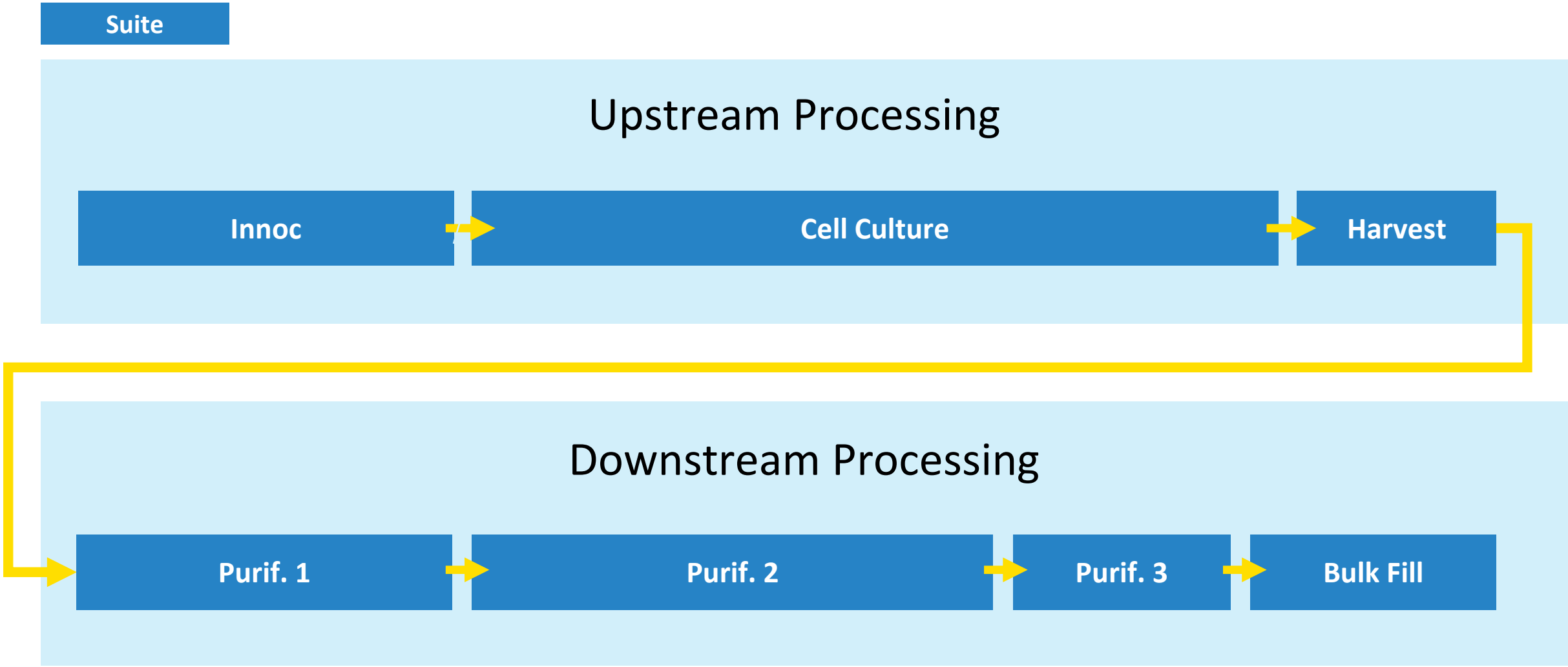


Virtual Plant Tour

- Patriot Park Facility in North Carolina

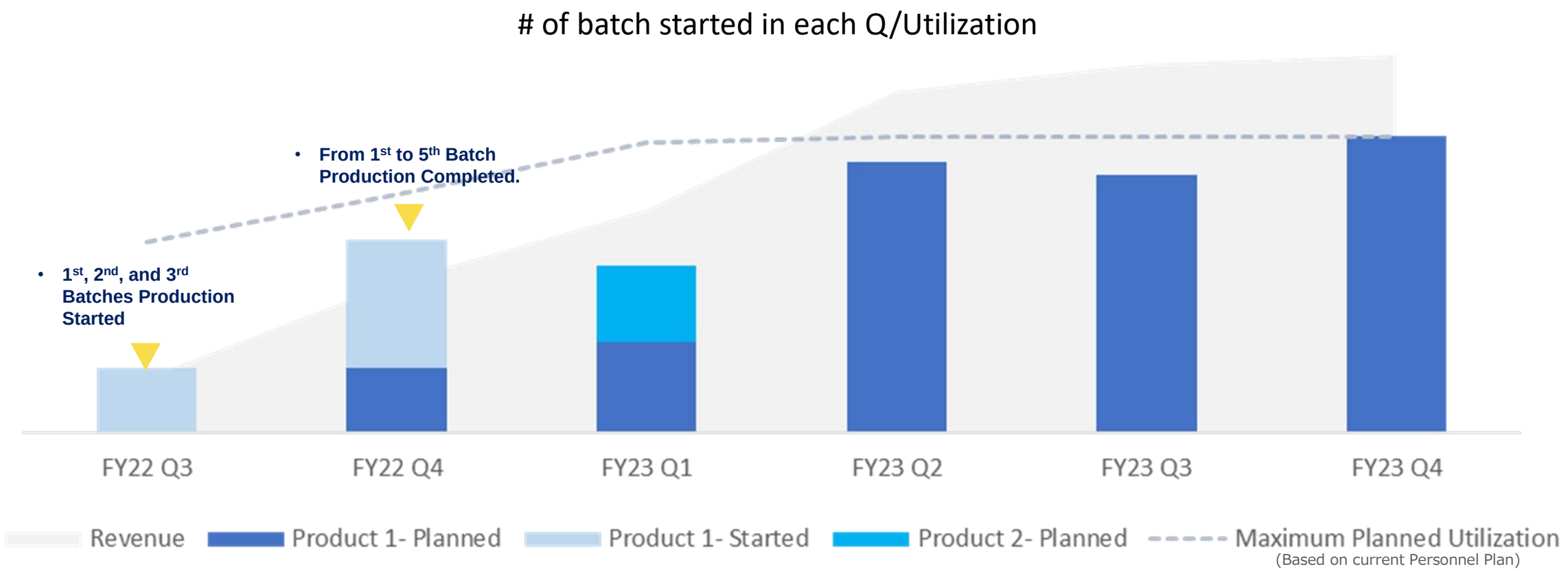
- Since: 2022
- Location: Research Triangle Park, NC
- Usage: Commercial manufacturing
- Feature:
  - 150,000 square-foot commercial manufacturing facility for Mammalian
  - 2000L bioreactor: 6
  - Campaign operation: 24x7
  - Purification rooms: 3
  - Significant future space

Production Process at Patriot Park Facility in North Carolina



Production Schedule of Patriot Park Facility: UPDATED

- Ramp Up Utilization and Achieve Full Utilization through Q4 FY23



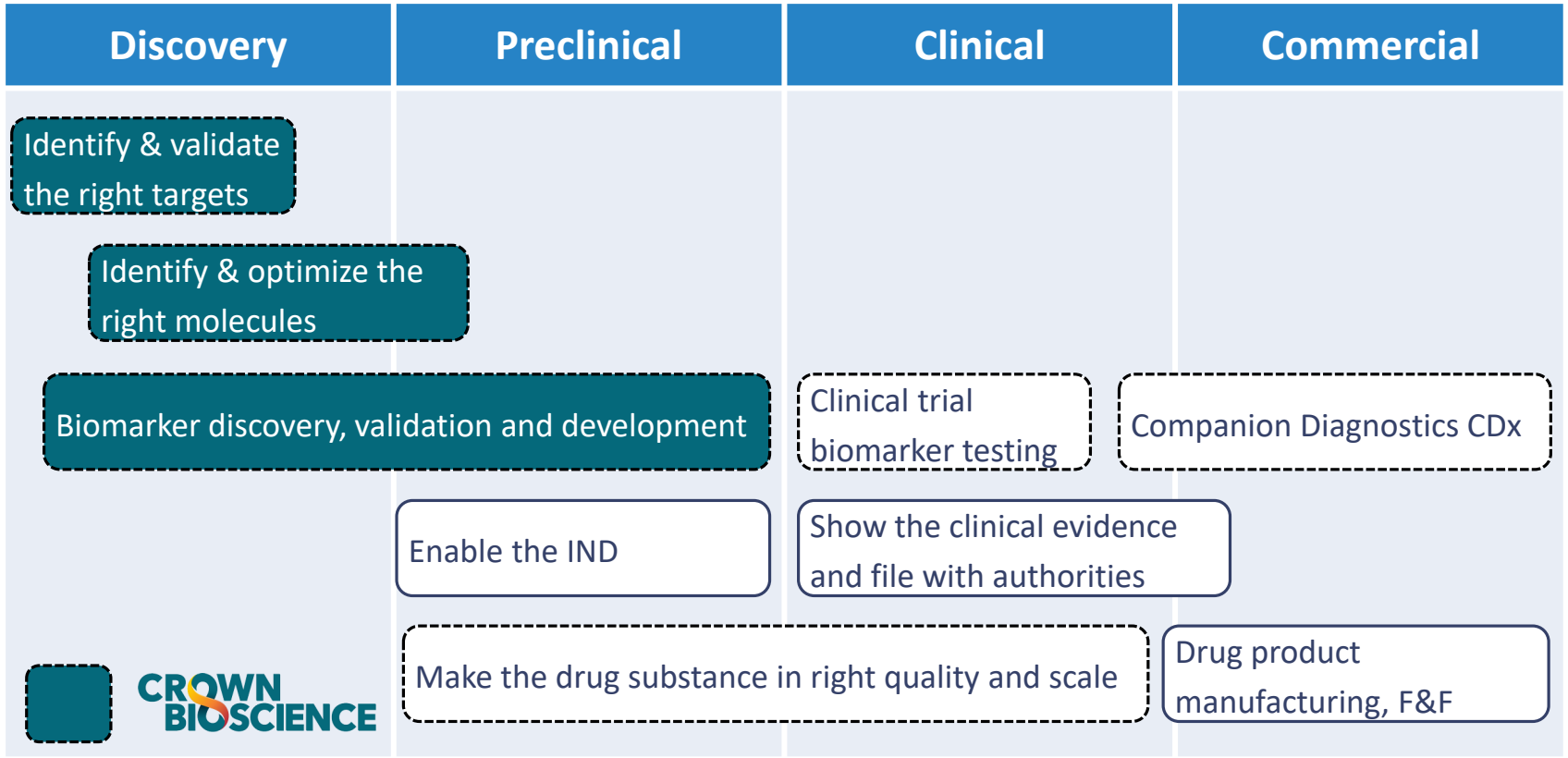
*The above production plan is subject to change as it is reviewed from time to time. No major changes from Q3 FY22 results.

*As of the end of February 2023.

CRO

Crown Bioscience is primarily active in discovery and early **pre**-clinical phases

Major Life Science Service (LSS) value streams Crown Bioscience is engaged in

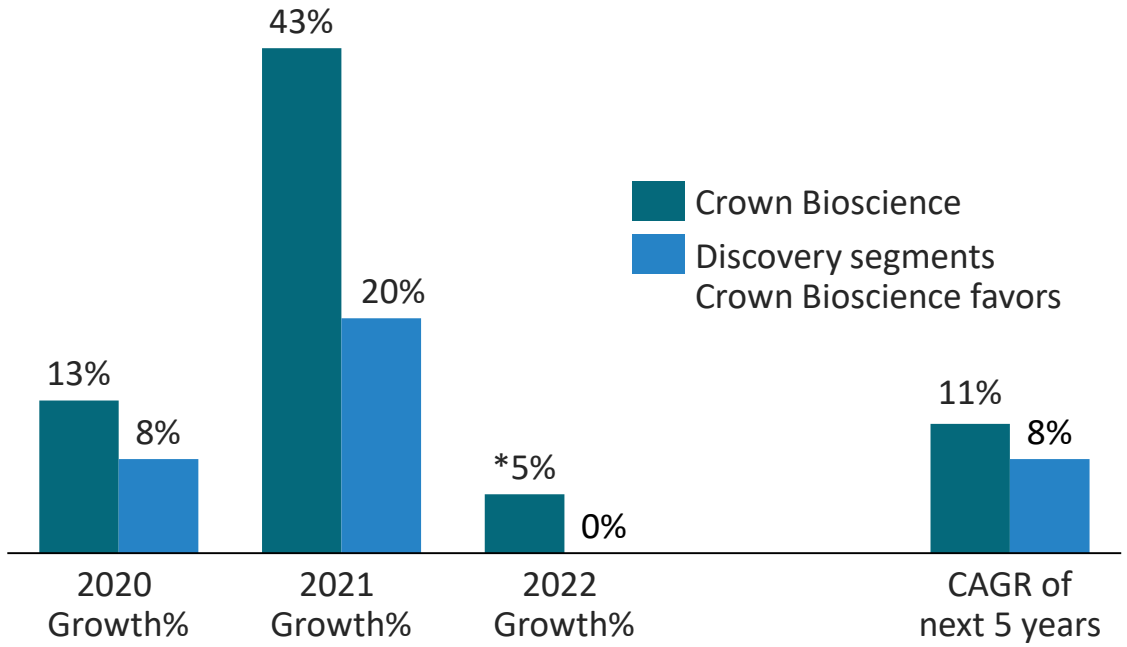


- Estimated market size of these three value streams is at $17.5 Billion in 2023 and grows at 5% CAGR through 2026.
- Crown Bioscience does not offer service for all segments within the three streams today. Estimated total accessible market size of Crown Bioscience would be >$1.2 Billion.

Source: Crown Bioscience management estimation

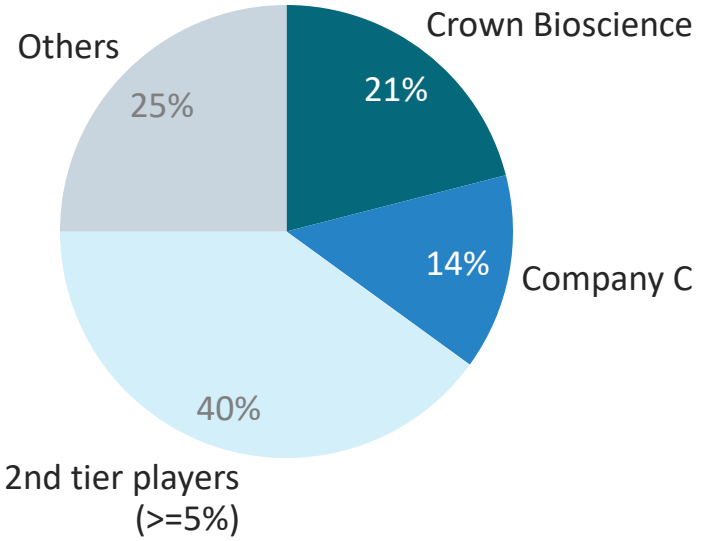
Crown Bioscience has consistently outperformed in the oncology pharmacology market

Crown Bioscience has exceeded market growth and expects this trend to continue



- 2022 market contraction was attributed to decline of fund raising in public markets and VC spend, particular in early stage biotech
- The future market outlook remains attractive because:
  - Outsourcing penetration is set to increase
  - Pharma R&D spend is estimated to increase by 2.6% pa through 2028.
  - At the same time, pharma are reducing their R&D labor force., driving up outsourcing needs

Crown Bioscience is the market leader in the oncology pharmacology market as of 2022

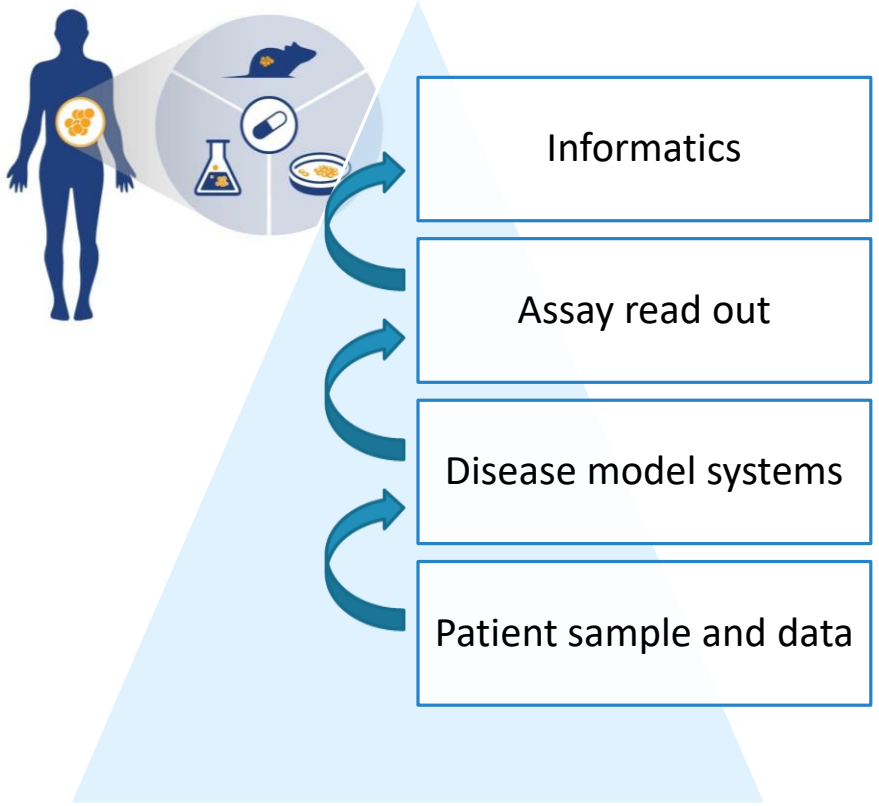


- In oncology pharmacology, the in vivo market represents a majority of the overall market, with in vitro and ex vivo markets contributing <50%

*Estimation
Source: Crown Bioscience estimated based on outside resources.

Crown Bioscience's comprehensive portfolio of translational biology services is a key differentiator for customers

Major foundations enabling full translational biology service



Crown Bioscience has advanced capabilities in each of the four foundations

Multi-Omics platforms

- 2nd generation NGS, Illumina and BGI
- 3rd generation NGS, PacificBio
- Bionano platform for structural variants
- Hypothesis free proteomics
- 10X single cell RNA and spatial biology
- Digital pathology

In house data science team

- Going beyond data generation CRO service to insight generation
- Partner with Cambridge Quantum Computing (CQC) to employ quantum technology to identify multi-gene biomarker for oncology drug

HuBase™

The world's largest and annotated PDX library

- 3,000 PDX models, ~10k users and 40k access yearly
- 15,000 treatment datasets

Acquired Ocello to become a leading Organoid model system CRO in 2021

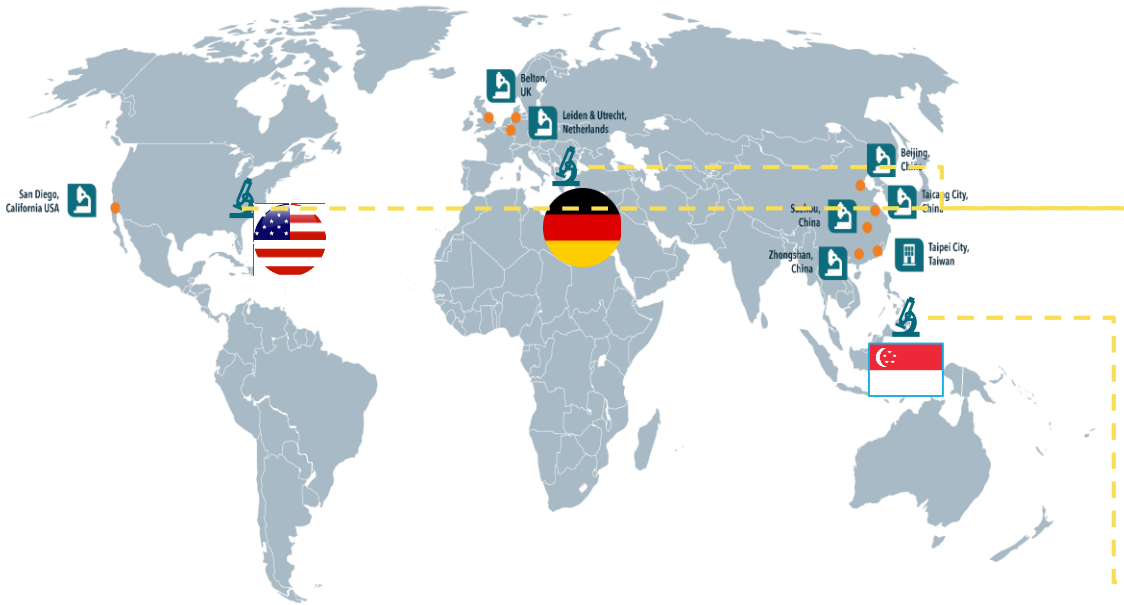
- FDA animal reduction act announced in 2022 could turbocharge the organoid CRO demand

43 novel drug approvals by FDA since Nov 2019, **17 novel oncology drug** approvals, Crown Bioscience directly contributed to **7** of them (~41%).

A global operations network ensures on time project delivery while maintaining consistent quality and competitive price

Global operations network with strong presence in Asia, allowing Crown Bioscience to manage both cost structure and operational sustainability

An illustration of Crown Bioscience site network as of Feb2023



Most Important factors when Choosing a CRO to Work With

- ✓ 1. Depth of resources to support quick project initiation and turnaround
- ✓ 2. Quality of work
- ✓ 3. Pricing

IndivuServ business unit acquisition from IndivuMed announced on Jan 25th 2023, estimated closing time Apr. 1

- Will have Certified CLIA* labs in EU and US

*CLIA: Clinical Laboratory Improvement Amendments

Opened Crown Bioscience's Singapore operation on Feb 10th 2023 in collaboration with A*STAR - Agency for Science, Technology and Research to hedge against China risks and US costs

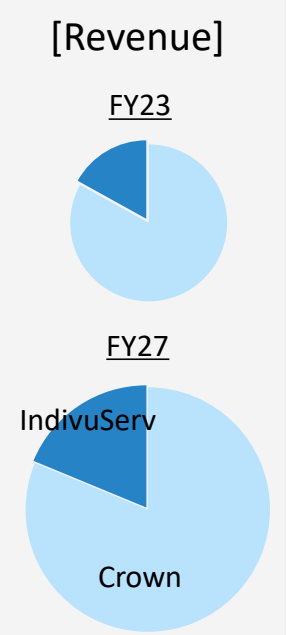
Indivumed acquisition will boost translational biology service and premium oncology sample access service

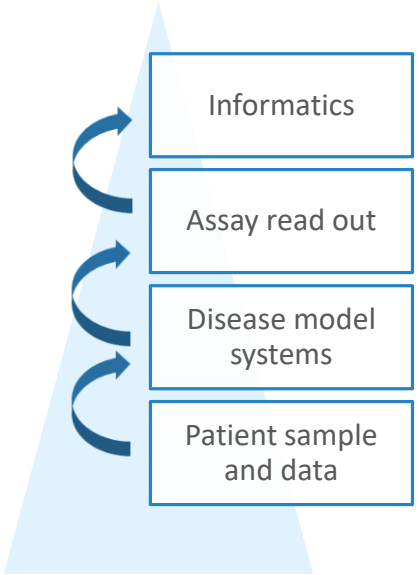
- IndivuServ is a business unit of Indivumed and will be acquired by JSR in this transaction.
- A market leader in prospective oncology high quality sample access service.
- Acquisition includes biomarker testing labs in US and Germany

Strategic rational 1 - Enter a high growth service subsegment driven by personalized medicine

- Entering premium oncology **sample acquisition biobanking** service market with total addressable market size **$0.5 Billion** and projected to grow at **low double digits** through 2026.

Strategic rational 2 - Highly complementary to translational biology service capability of Crown Bioscience





Value creation opportunity of the deal to Crown Bioscience

Synergy rating	Unmet customer needs	Benefit to Crown Biosciences
L		▪ Upsell more data analysis service because of strong data generation capabilities
H	Availability and quality of biospecimens prolong the biomarker project timeline	▪ Streamlined bioassay validation and testing attracts more customer ▪ CLIA lab and regulatory know how
H	More translational models to minimize clinical stage failure	▪ Offer patient sample based ex-vivo assay
H	Samples paired with deep characterization data	▪ Faster expansion of model repository

Source: Crown Bioscience management estimation; LEK;

By leveraging JSR's Japan heritage, we can gain a competitive advantage in the LSS market of Japan

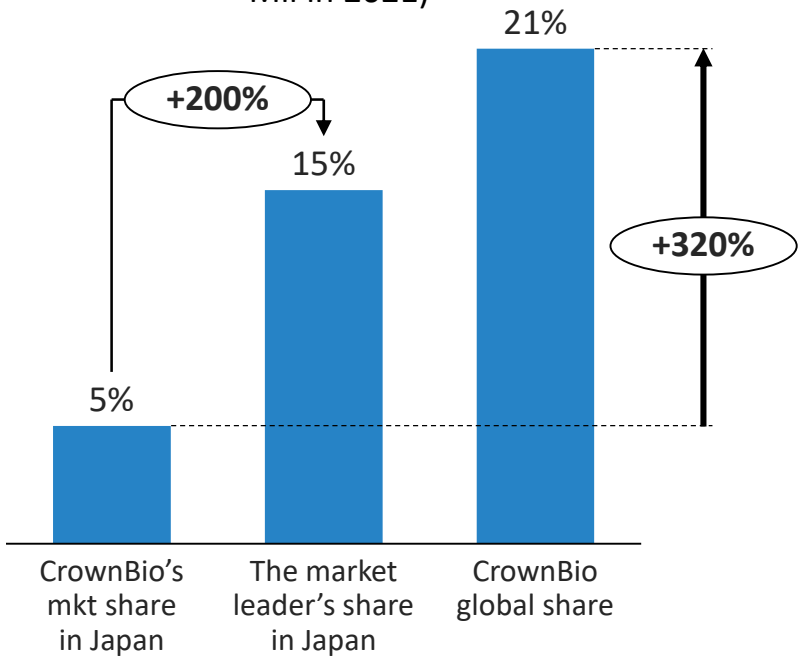
Strategic rational 1 – Unlock full potential of Crown Bioscience in Japan market

Strategic rational 2 – Could be a launchpad for new service offerings globally

CROWN BIOSCIENCE
Together with MBL

Short to mid term

Large head room to grow in Japan Oncology pharmacology (estimated at $100 Mil in 2021)

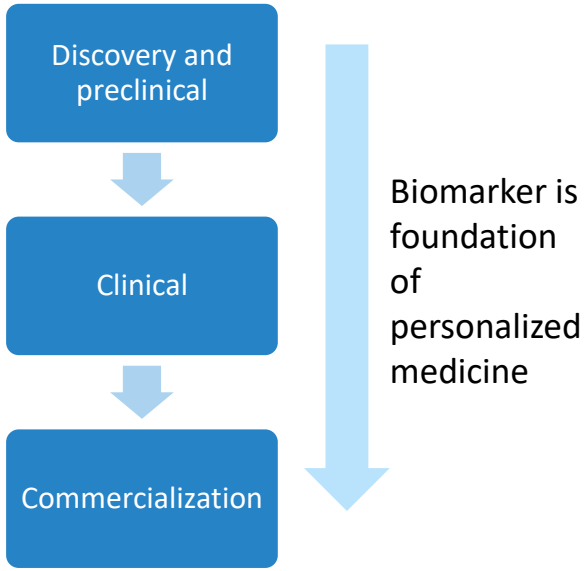


Operation and science know how

Brand name in Japan LSS space

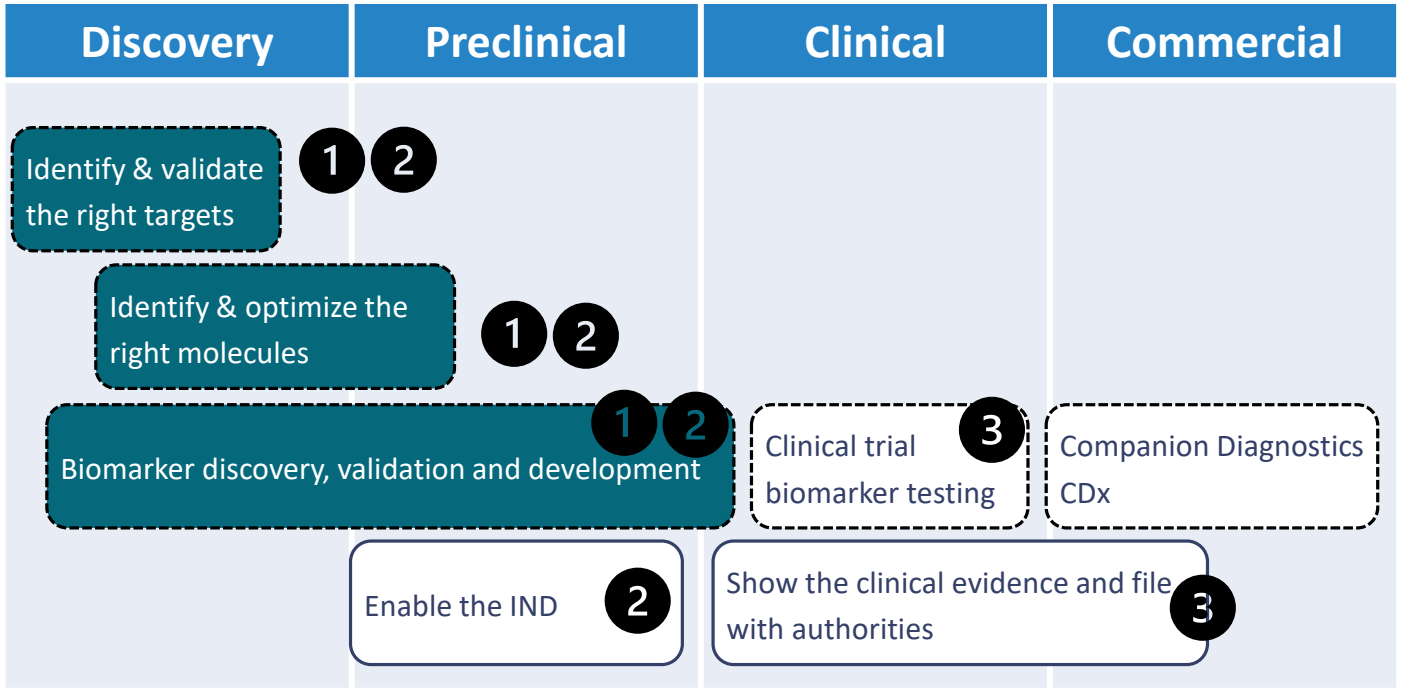
Mid to long term

New offering trialed in Japan could be scaled up to global market



Source: LEK, Crown Bioscience management estimation

Future portfolio expansion strategies of Crown Bioscience



1. Defending market leading position of Crown Bioscience's core business
2. **Expanding the accessible market size** of Crown Bioscience in the preclinical space
3. Strengthening the preclinical CRO portfolio with the goal of becoming **preclinical and clinical CRO specialized for personalized medicine**

Thank You