

Denka

Possibility
of
chemistry

FY2021 Results Presentation Topics Healthcare Business

May 11, 2022

1. Corporate History
2. Performance Trends
3. Priority Measures
 - a) Diagnosis (POCT/non-POCT clinical test reagents)
 - b) Prevention (influenza vaccine)
 - c) Treatment (G47 Δ virus preparation for cancer treatment)
4. New Initiatives for the Next Management Plan

Contributing to society as a specialty company dealing in a range of vaccines and test reagents

Established

Established Niigata Branch,
Tokyo Shibaura Electric Co., Ltd
Physical and Chemical Research Institute

Transitioned to become
a subsidiary of Denki Kagaku
Kogyo Kabushiki Kaisha (Denka)



Established Physical and Chemical
Research Institute Co., Ltd.

Name changed to Toshiba
Chemical Corporation

Company name changed to
Denka Seiken Co., Ltd.

Launched Life
Innovation Division

Business
integration



- Vaccine production begins (1945)
- Moved to Toshiba Gosen Plant (1947)

- Influenza vaccine (1952)
- Bacteria test reagents/Shigella (1952)
- Japanese encephalitis vaccine (1954)
- Virus test reagents/Adenovirus (1966)
- Clinical chemistry reagents (1972)
- Influenza HA vaccine (1972)

- Pathogenic escherichia coli immune serum O157 (1985)
- Kagamida Plant begins operations (1994)
- Influenza test reagents (1999)
- Hyaluronic acid preparation (2000)
- Influenza A-B Quick Seiken (2000)
- Small dense LDL-cholesterol measuring reagent sd-LDL (2004)
- QuickNavi™-Flu (2008)

- Acquisition of all shares in Germany-based Icon Genetics (2015)
- Provided Ebola virus rapid diagnostic kits to the Democratic Republic of Congo (2017)
- Acquisition of 33.4% of shares in Taiwan-based PlexBio (2019)
- COVID-19 rapid antigen test kit (2020)
- G47Δ virus for cancer treatment (2021)

3 すべての人に健康と福祉を

8 働きがいも経済成長も

9 産業と技術革新の基盤をつくろう

17 パートナーシップで未来を創ろう

Prevention

- Influenza HA vaccine
- Adsorbed tetanus toxoid



Diagnosis

- Test reagents (Rapid antigen test kit, immune serum reagents, etc.)



Treatment

- Macromolecular hyaluronic acid formulation
- G47Δ virus preparation for cancer treatment

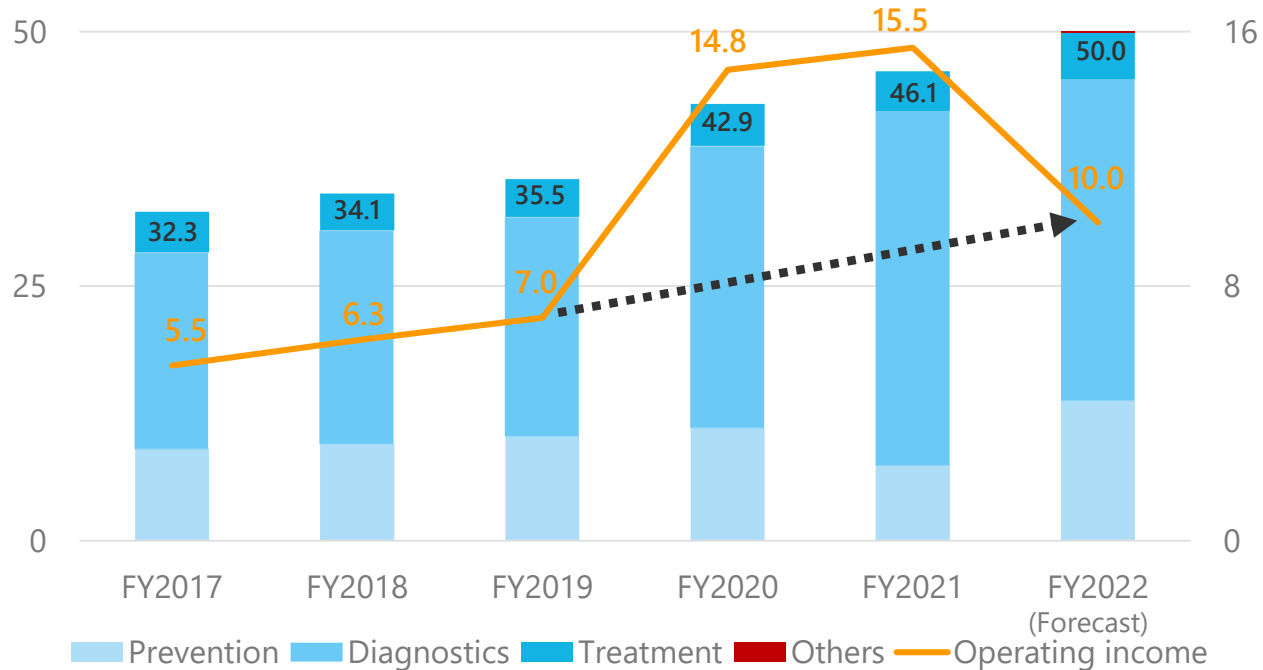


Sales and Operating Income Trends in the Healthcare

Business (Life Innovation Division)

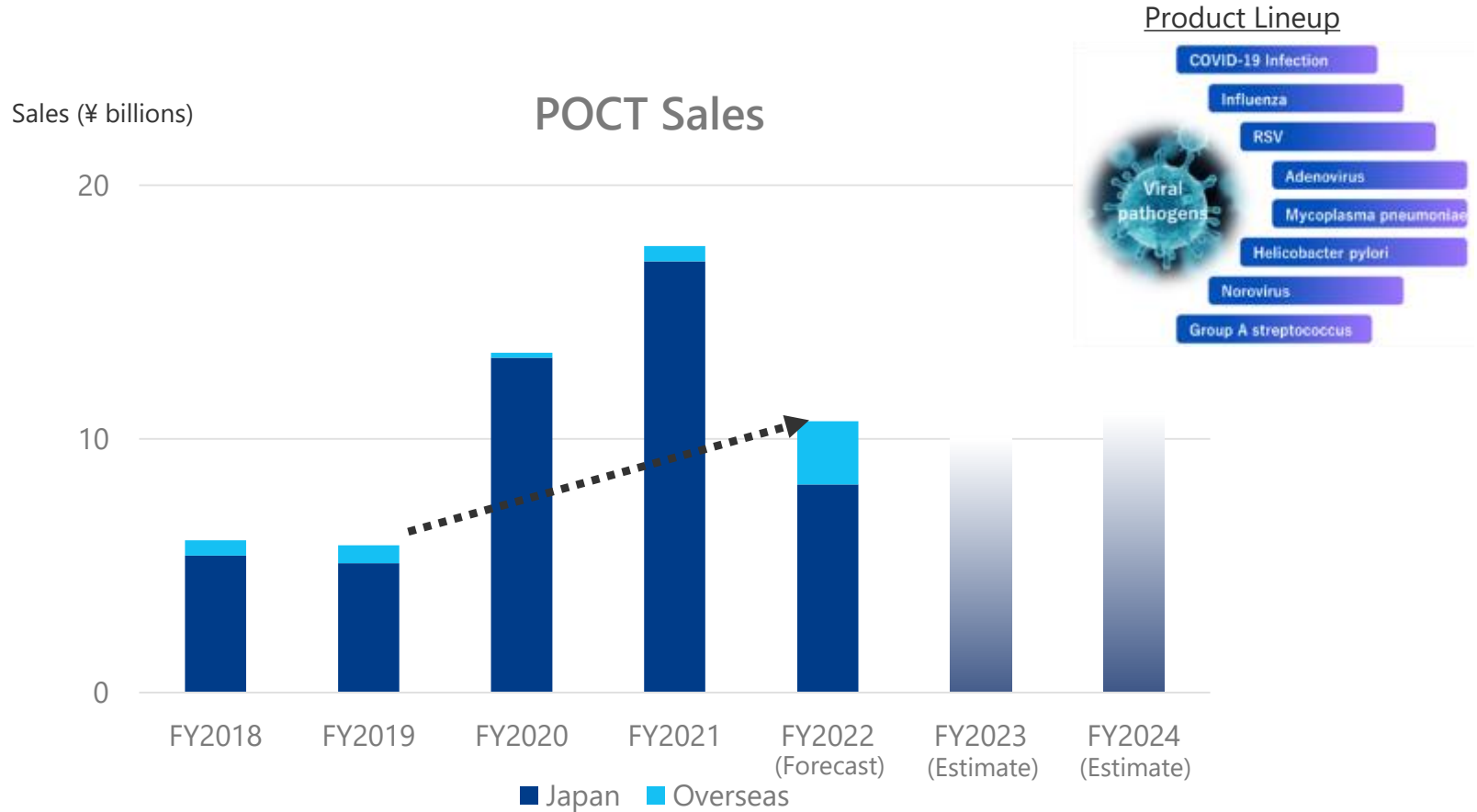
(Sales: ¥ billions)

(Operating income: ¥ billions)



In FY2020 and FY2021 sales skyrocketed for COVID-19 rapid antigen test kits

POCT sales almost doubled from pre-COVID levels despite a significant decrease when compared to FY2021

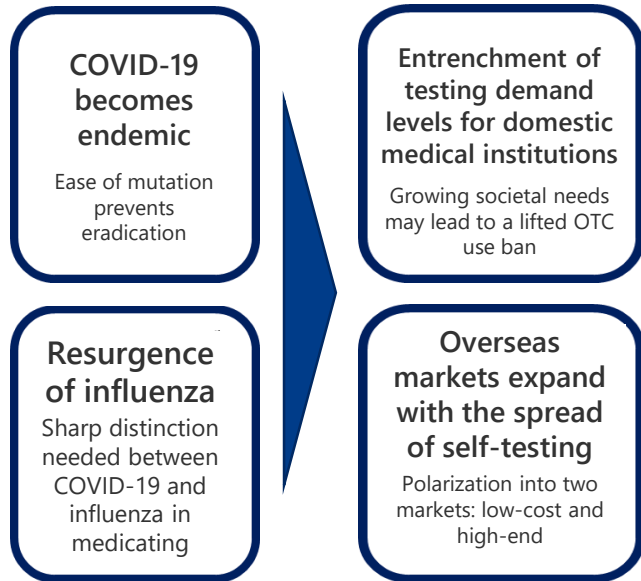


*POCT: Point of Care Testing. Testing performed by a medical professional in the presence of the examinee, providing shorter test times and more familiarity with the test to the examinee, contributing to prompt and accurate medical treatment, nursing care, disease prevention, and health promotion, and thereby improving the quality of medical care, quality of life (QOL), and satisfaction for the examinee.

As a leading manufacturer, proactively adapting to rapid POCT business environment changes driven by COVID-19



Assumptions: POCT Business Environment



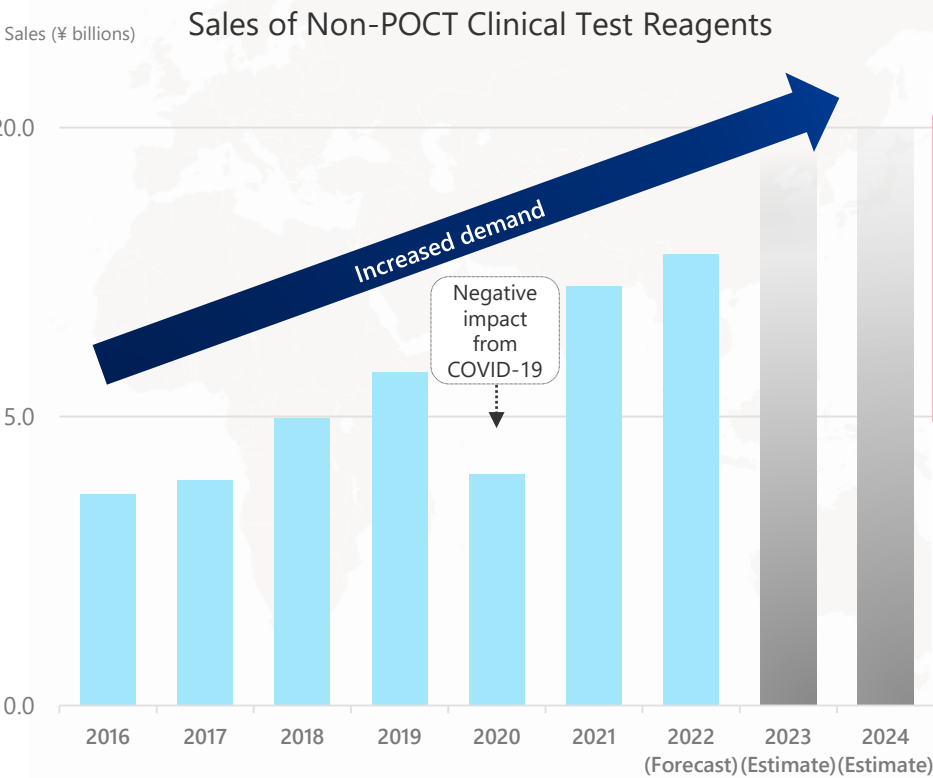
Market	<ul style="list-style-type: none"> • Overseas: Accelerating the self-test area Supply for U.S.-based Xtrava Health, etc. • Domestic: Ensure timely and stable supply and market share (30%) by strengthening cooperation with distributors
Production	<ul style="list-style-type: none"> • Expansion of manufacturing facilities • Increase in total production capacity including storage and transportation • Improvement in productivity through digital technologies and automation ⇒ Proactive investment in the Kagamida Plant
Development	<ul style="list-style-type: none"> • High sensitivity • Support for assessment devices (readers/apps)

*OTC: Drugs that can be purchased "over the counter" at pharmacies, drugstores, etc. without a prescription

*Self-testing: Testing conducted by a large organization, e.g. corporate, academic, military, rather than a medical institution

Achieving sales of non-POCT clinical test reagents via OEM and bulk supply to major platformers in Europe/North America as well as players in China, meeting growing global demand

CRP: 30% global market share



Lineup of 2,000 products

	Category	Main testing items	Usage
1	Immunoserology test	CRP, FER, IgG, etc.	Detection of various substances in blood using antigen-antibody reaction (wide range of applications)
2	Clinical chemistry test	Cholesterol (HDL, LDL, sd-LDL), etc.	Detection of cholesterol and other blood substances using enzymes and chemical reactions
3	Bacteria test	Shigella, pathogenic escherichia coli, salmonella, staphylococcus, etc.	Epidemiological studies at health centers, etc.
4	Virus test	Measles, rubella, etc.	Antibody titer testing prior to vaccinations, prenatal checkups

⇒ Mainly for automatic analyzers

Terminology

- CRP: C-reactive protein
- FER: Ferritin, an iron-binding protein
- IgG: Immunoglobulin



*Platformers: Companies that sell their own automated analyzers and specialized reagents

Decided to increase capacity to meet growing worldwide testing demand

POCT	Increasing facility capacity by Approx: 2.5x
Clinical test reagents (Non-POCT)	Increasing production capacity by Approx: 2x

Exterior view of the new manufacturing wing of the Gosen Site's Kagamida Plant (illustration)



Business, production, logistics process reform and automation through area expansion and digitalization

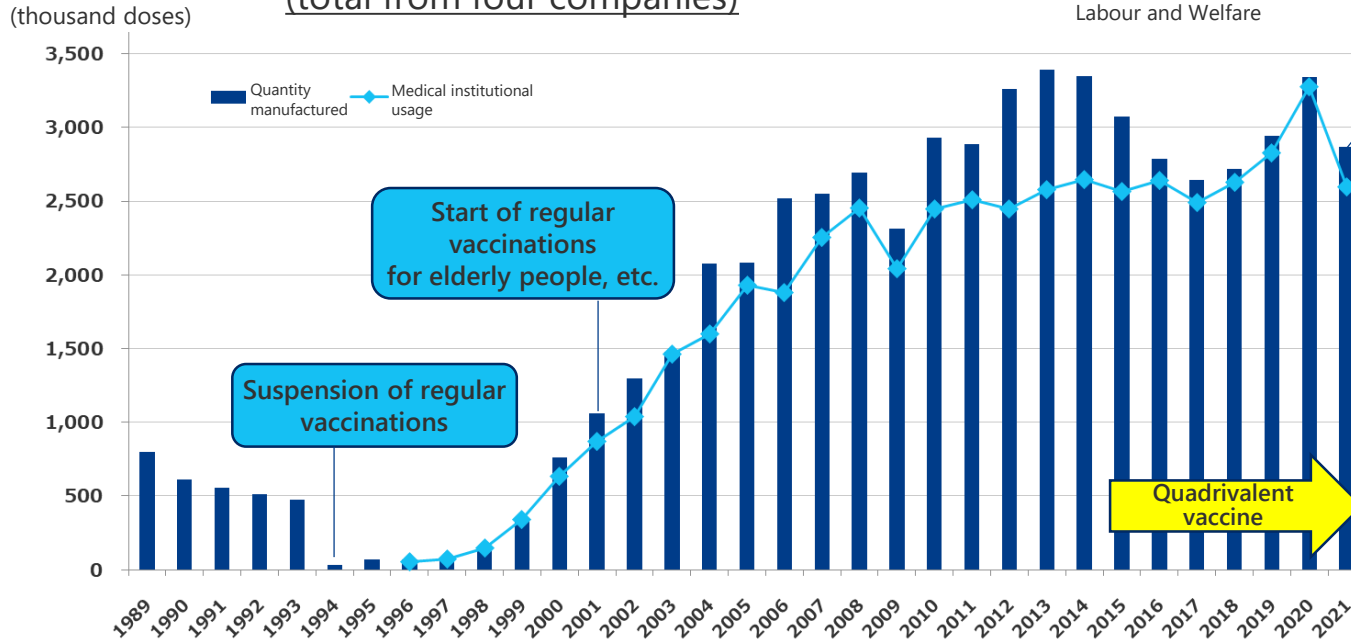


Strengthening cost competitiveness

Completion: Second half of 2024 / Investment: Approx. ¥11 billion

Domestic supply of influenza HA vaccine (total from four companies)

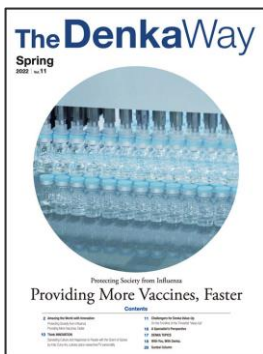
*Prepared from publicly available data of the Ministry of Health, Labour and Welfare



Supply volume significantly decreased due to degraded productivity among manufacturing strains and difficulties in procuring materials from COVID-19.

Stable demand even amid the COVID-19 pandemic

Four companies (including Denka) support social systems by manufacturing domestic influenza vaccines



Protecting Society from Influenza

Providing More Vaccines, Faster

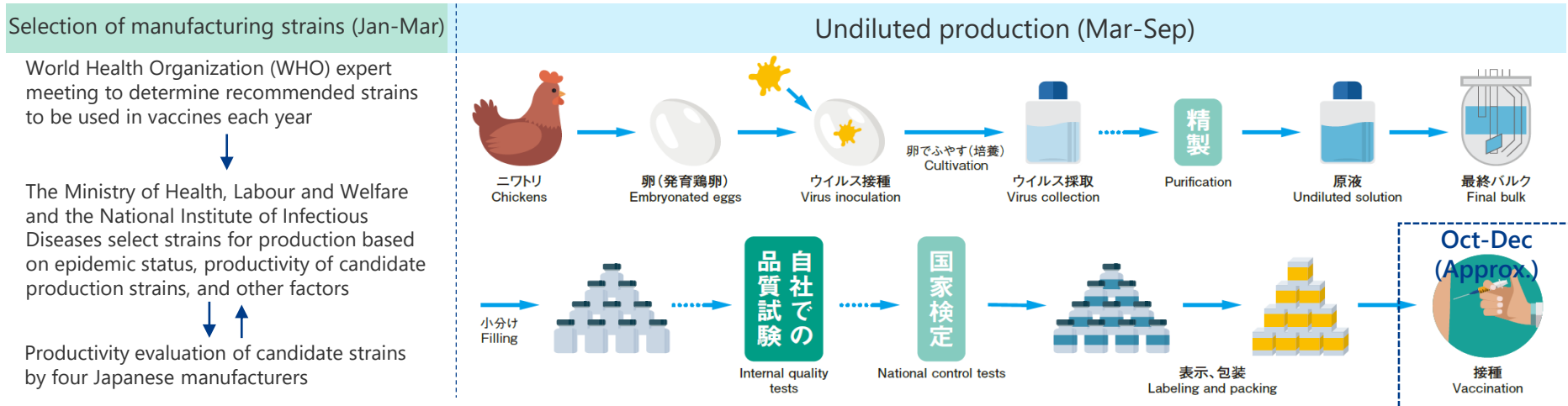
Significant increase in facility capacity enables faster and more stable supply FY2022 manufacturing target: 10 million vaccines (for approximately 20 million people)



- Advantage 1**
 Flexibly adapting to productivity fluctuations and contributing to stable supply
 ⇒ **Fulfillment of social responsibility**
- Advantage 2**
 Increasing supply early in the vaccination season
 ⇒ **Elimination of lost vaccination opportunities**
- Advantage 3**
 Installing state-of-the-art automation equipment
 ⇒ **Productivity Improvement**

- Launched March 2022
- Investment: Approx. ¥16 billion

Influenza Vaccine Manufacturing Timeline

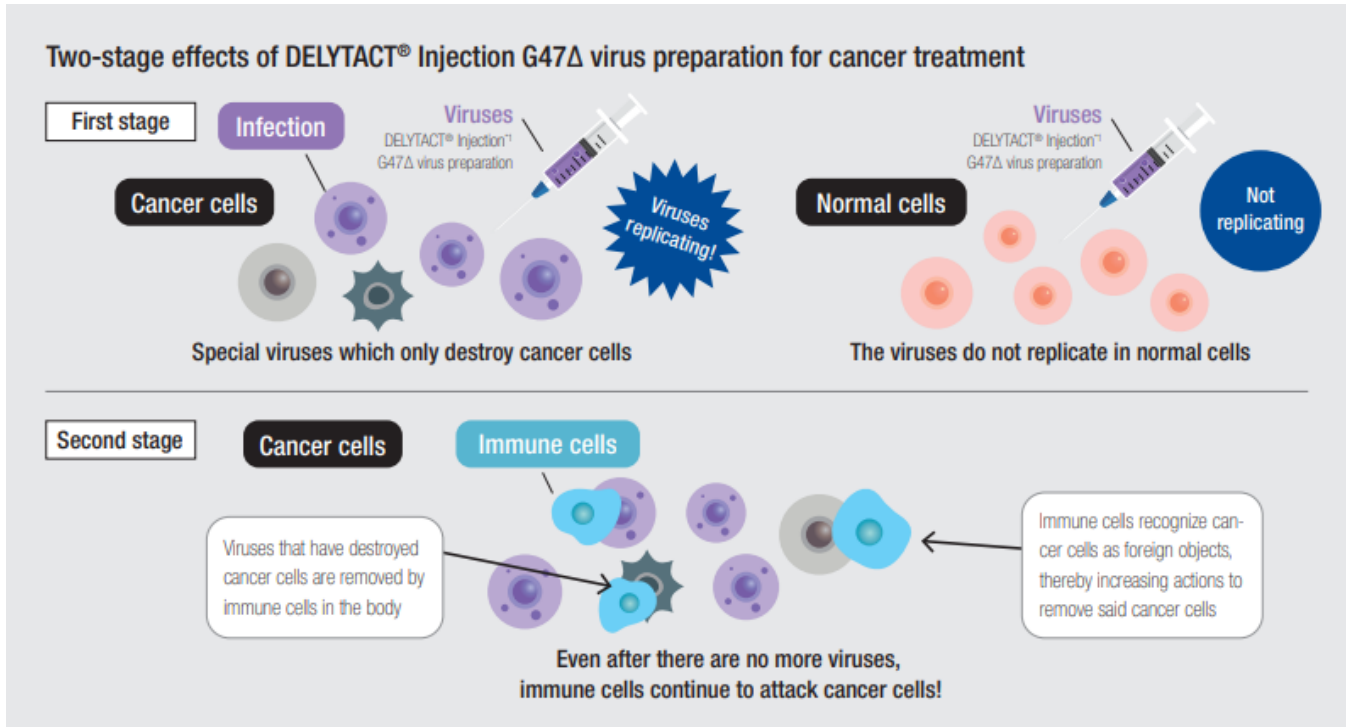


3. Priority Measures

c) Treatment (G47Δ Virus Preparation for Cancer Treatment)

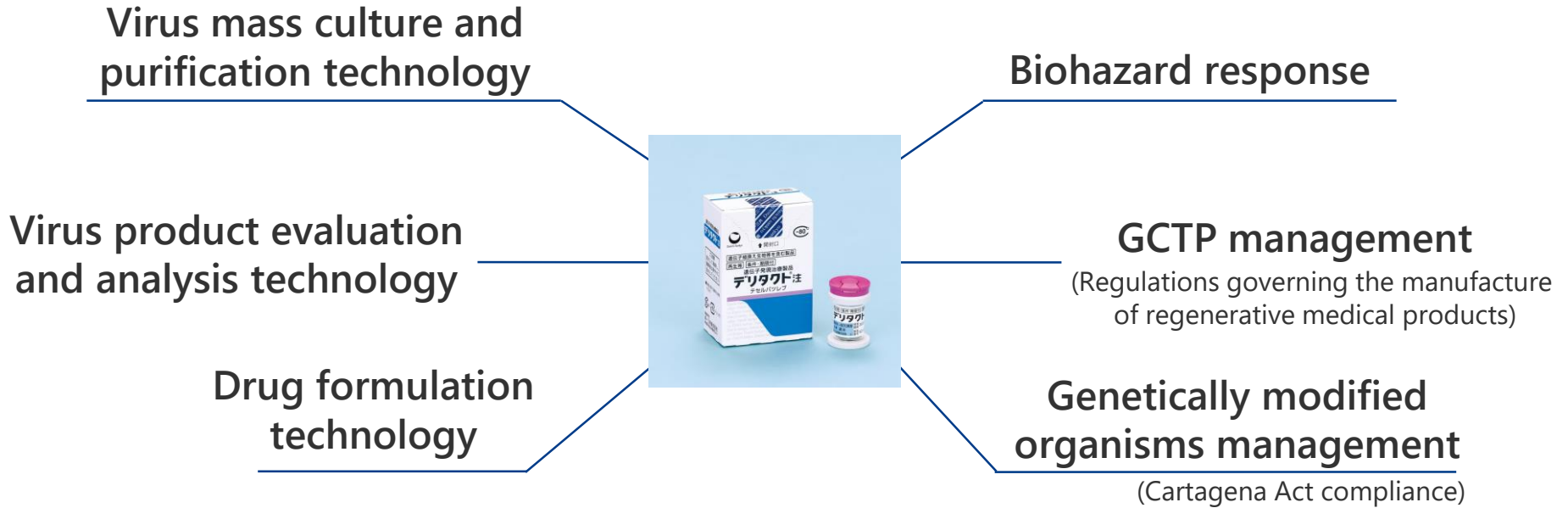
<p>June 2021</p>	<p>Daiichi Sankyo Company, Limited receives approval to manufacture and market a regenerative medicine product for the treatment of malignant glioma in Japan under conditional and time-limited approval</p>
<p>October 2021</p>	<p>Shipments begin from Denka to Daiichi Sankyo</p>
<p>November 2021</p>	<p>Daiichi Sankyo begins sales of a treatment for malignant glioma under the product name "DELYTACT® Injection" (Drug price: Approx: ¥1.43 million/1mL per vial) → Daiichi Sankyo-driven studies are underway for expanding its range of indications</p>

World's first virus preparation for cancer treatment approved for malignant glioma



*DELYTACT is a registered trademark of Daiichi Sankyo Company, Limited.

Developing commercial production technology by integrating fundamental technologies cultivated in the vaccine and test reagent business

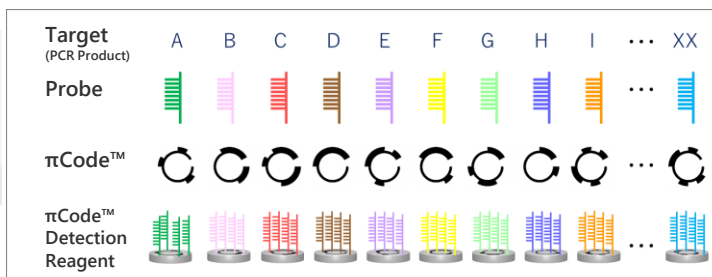
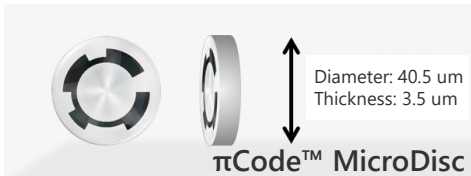


Aiming to develop a stable supply system and expand into the Contract Development and Manufacturing Organization (CDMO) business for viral preparations, etc.

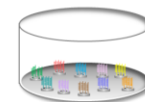
4. Outlook for the Next Management Plan (IntelliPlex Business Development)

IntelliPlex™ System Features (PlexBio Taiwan)

- Multiple, simultaneous measurements
- High sensitivity
- Compatible with both antigen/antibody (immunoassay) and genetic testing



Add to one well as detection reagent



Number of sepsis cases worldwide: 20-30 million/year

Strengthen collaboration to develop systems (reagents and instruments) for identifying pathogenic microorganisms and conducting genetic testing for drug-resistant bacteria in sepsis
 ~ Acquired 33.4% stake in PlexBio Co., Ltd. (2019) ~

➤ Reagents

- Contribute solutions to the global challenge of combating drug-resistant bacteria
- Develop a proprietary sepsis diagnostic reagent

➤ Diagnostic Instruments

- Improve convenience in clinical settings
- Produce **fully automated equipment** via joint development

File for regulatory approval in Japan by the end of fiscal 2022

FY2025 Launch

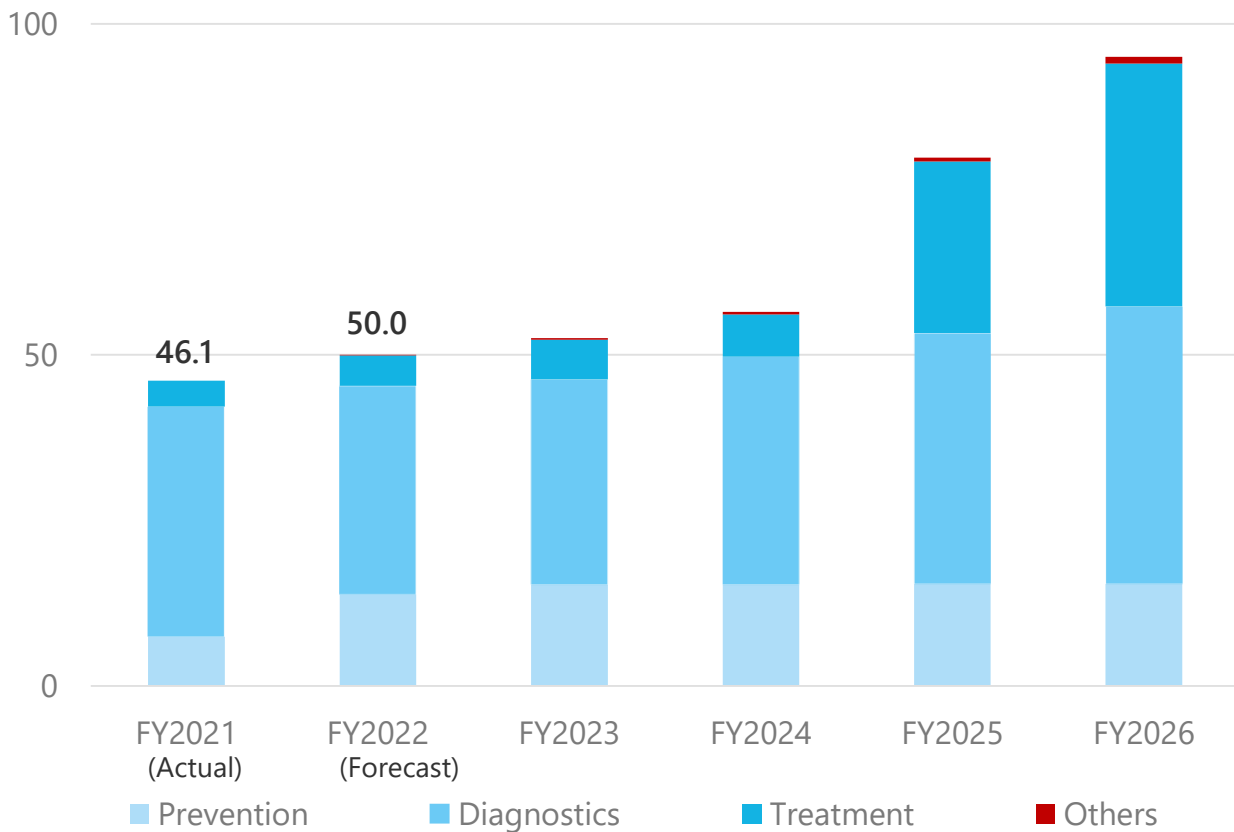


Fully Automated Device (Conceptual Image)

*IntelliPlex and πCode are trademarks of PlexBio Co., Ltd.

Significant growth in the "Treatment" field

(Sales: ¥ billions)



Respecting the Dignity of Life and Protecting People's Health

Possibility of chemistry

Denka

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