

#### Yoshimasa Kyokawa

Vice President, Corporate Communications Department and Corporate Secretariat, Corporate Strategy Division

March 4, 2022



### **Forward-Looking Statements**



- Forecast or target figures in this material are neither official forecasts of earnings and dividends nor guarantee of target, achievement and forecasts, but present the midterm strategies, goals and visions. Official earnings guidance should be referred to in the disclosure of the annual financial report (*kessan tanshin*) in accordance with the rules set by Tokyo Stock Exchange.
- 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. Risks and uncertainties particularly apply with respect to product-related forward-looking statements. Product risks and uncertainties include, but are not limited to, technological advances and patents attained by competitors; challenges inherent in new product development, including completion of clinical trials; claims and concerns about product safety and efficacy; regulatory agency's examination period, obtaining regulatory approvals; domestic and foreign healthcare reforms; trend toward managed care and healthcare cost containment; and governmental laws and regulations affecting domestic and foreign operations.
- For products that are approved, there are manufacturing and marketing risks and uncertainties, which include, but are not limited to, inability to build production capacity to meet demand, lack of availability of raw materials, and failure to gain market acceptance.
- Shionogi disclaims any intention or obligation to update or revise any forward-looking statements whether as a result of new information, future events or otherwise.
- This material is presented to inform stakeholders of the views of Shionogi's management but should not be relied on solely in making investment and other decisions.
- You should rely on your own independent examination of us before investing in any securities issued by our company. Shionogi shall accept no responsibility or liability for damage or loss caused by any error, inaccuracy, misunderstanding or changes of target figures or any other use of this material.
- This English presentation was translated from the original Japanese version. In the event of any inconsistency between the statements in the two versions, the statements in the Japanese version shall prevail.



### Agenda



#### 1. Pharmaceutical Business

- Japanese Pharmaceutical Market
- Challenges and Prospects for the Pharmaceutical Business

#### 2. What's SHIONOGI

### 3. Sustainable Growth as a Leading Company in Infectious Diseases

-Aiming to Protect People Worldwide from the Threat of Infectious Diseases-

#### 4. Shareholder Return





### 1. Pharmaceutical Business

- Japanese Pharmaceutical Market
- Challenges and Prospects for the Pharmaceutical Business



### **Classification of Drugs**



- Drugs are generally classified into *prescription drugs* and *OTC*\* and quasi-drugs
- Prescription drugs are further classified into *New Prescription drugs* and *generic drugs*

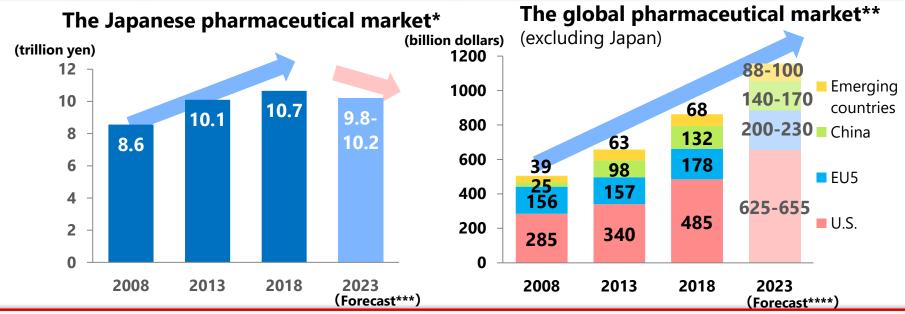




### **Changes in the Pharmaceutical Market Size**



- The Japanese pharmaceutical market is worth around 10 trillion yen/year
- Among developed countries, only the Japanese market is forecast to post negative growth in 2023
- The global pharmaceutical market, mainly the U.S. and China, is expected to expand







### 1. Pharmaceutical Business

- Japanese Pharmaceutical Market
- Challenges and Prospects for the Pharmaceutical Business



### **Process to Launch New Prescription Drugs**



#### 9 - 16 years

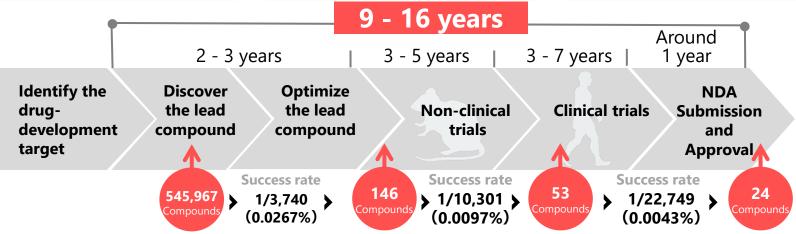
It takes about 15 years from initiation of discovery to launch of a new prescription drug

#### Tens of billions of yen

Tens of billions of yen to hundreds of billions of yen of R&D expenses are necessary to discover and develop a new prescription drug

#### 0.004%

The probability of a compound being launched as a new drug is about 1 in 23,000



According to a report from Tufts University (US), the development cost required to launch a new drug is approximately 170 billion yen\*



### **Patent Term and Generic Drugs**

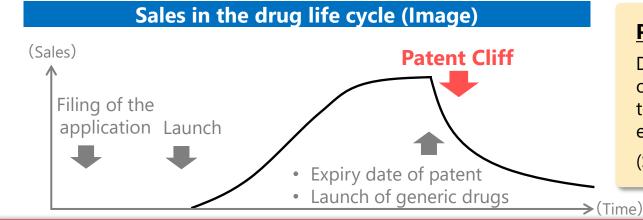


### Patent Term is twenty years from the filing date of the application

**Patent expiration** 

Other companies can manufacture the same drug

#### **Generic drugs are launched**



#### **Patent Cliff**

Dramatic decrease in the sales of new prescription drugs due to launch of generic drugs after expiry date of patent

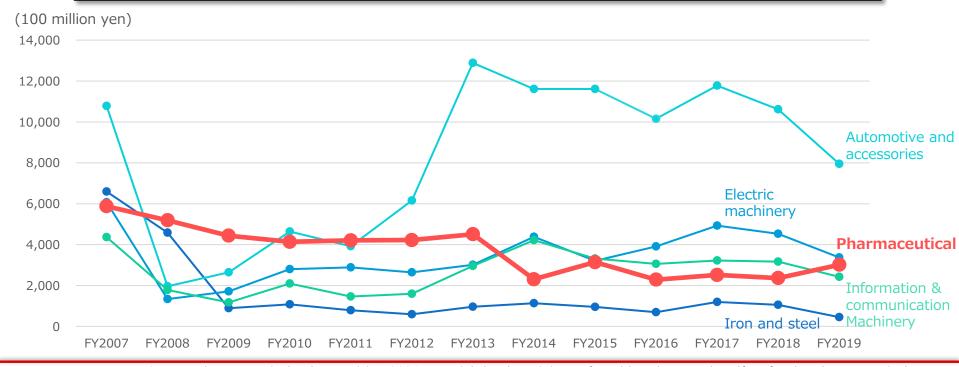
(Sales chart is shaped like a cliff)



### **Domestic Tax Payments of Japan's Major Manufacturing Sectors**



• The pharmaceutical sector contributes to the Japanese economy with its stable tax capacity



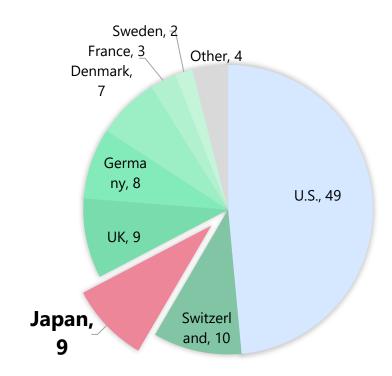


Source: Pharmaceutical Industry Vision 2021 Materials by the Ministry of Health, Labour and Welfare for the pharmaceutical sector; "Income taxes - current" section of the Financial Statements Statistics of Corporations by Industry by the Ministry of Finance for other sectors

### **Number of Drugs Developed by Major Country (FY2019)**



- Only a handful of countries can discover new drugs
- Japan ranks third in the world for new prescription drug discovery
- Japan is the only Asian country that discovers new prescription drugs





### **Contributions and Challenges by the Pharmaceutical Industry**



# Development and spread of scientific technology

- Industry-academic-government cooperation
- Challenge of cutting-edge fields
- Fostering and use of advanced and diversified human resources

#### Mission as a liferelated industry

"Contributions to the improvement of health and welfare of people in the world"

#### **Contributions to economic growth**

- Stable and high-level tax-bearing capacity
- Pharmaceutical industry as a high-value added industry
- Investment in R&D

#### Realization of a society of health and longevity

- Contributions by new drugs
- Efforts to satisfy unmet medical needs
- Efforts to overcome intractable diseases
- Elimination of drug lag

# **Contributions to the global health community**

- Global development of new drugs
- Alliance with Asian countries
- Role of Japan in the creation of new drugs
- 3 major infectious diseases and NTDs\*



#### **Contributions to COVID-19**

- Stable supply of pharmaceuticals
- Promotion of R&D of therapeutic drugs and vaccines, etc.





### 2. What's SHIONOGI



### Shionogi Known for "MUSIC FAIR," "SEDES," "Popon S," etc.





- Broadcast for more than 50 years since August 31, 1964, under the sole sponsorship of Shionogi
- The longest running music program on commercial TV in Japan



Designated class 2 OTC drug



Designated class 2 OTC drug



Designated class 2 OTC drug



Designated quasi-drug



Class 3 OTC drug



Designated class 2 OTC drug



Class 2 OTC drug



### What's SHIONOGI - philosophy -



#### Shionogi's purpose

Shionogi strives constantly to supply the best possible medicine to protect the health and wellbeing of the patients we serve.

#### For this purpose, Shionogi will need to:

Pursue the search for even better medicines.

Produce even better medicines.

Promote awareness of these better medicines to more people so that more people will be able to use these medicines.

Research, produce and promote in an even more economical manner.

#### For this purpose, Shionogi people will need to:

Strive ceaselessly day after day to improve their skills.

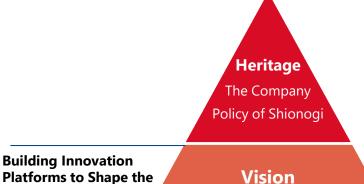
Strive ceaselessly day after day to improve as human beings.

#### As a result, Shionogi people will:

Find even greater satisfaction in their daily work and in their daily lives.

Find even greater improvement in the quality of their lives.

Find even greater prosperity in their lives. (Established on January, 1957)



- ·Be trustworthy
- ·Be dauntless in spirit

**Future of Healthcare** 

- · Contribute to society
- ·Be bold
- ·Build greatness out of diversity

What we want to achieve by 2030

#### **Values**



### **SHIONOGI** – company profile –



Shionogi & Co., Ltd., based in Osaka, is a prescription drug-based pharmaceutical company founded more than 140 years ago, aiming to contribute to people's health as a "HaaS\*\* company" that provides healthcare services

Corporate Name	SHIONOGI & CO., LTD.	SHIONOGI	
Chief Executive	President and CEO: Isao Teshirogi, Ph.D.	1	
Established	March 17, 1878 in business for 144 years		
Incorporated	June 5, 1919		
Head Office	Doshomachi, Chuo-ku, Osaka, Japan		
Number of Employees	5,485 (consolidated)		
Category of Business	Marketing and Manufacturing of Drugs		
Type of Business	Manufacturing and distribution of pharmaceuticals, diagnostic reagents and medical devices, etc.		
Consolidated Revenue	¥ 297.2 billion** (Prescription drugs 96% and OTC and quasi-drugs 4%)		
Operating profit	¥117.4 billion** (Operating profit margin: 39.5%)		

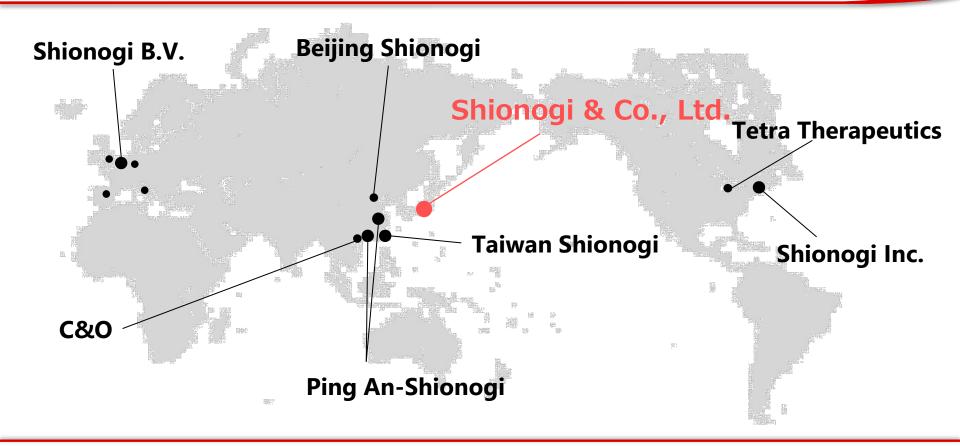


<sup>\*</sup> HaaS; Healthcare as a Service: Providing a range of healthcare services in line with customer needs, other than only supplying pharmaceuticals.

\*\* as of March 31, 2021 (IFRS)

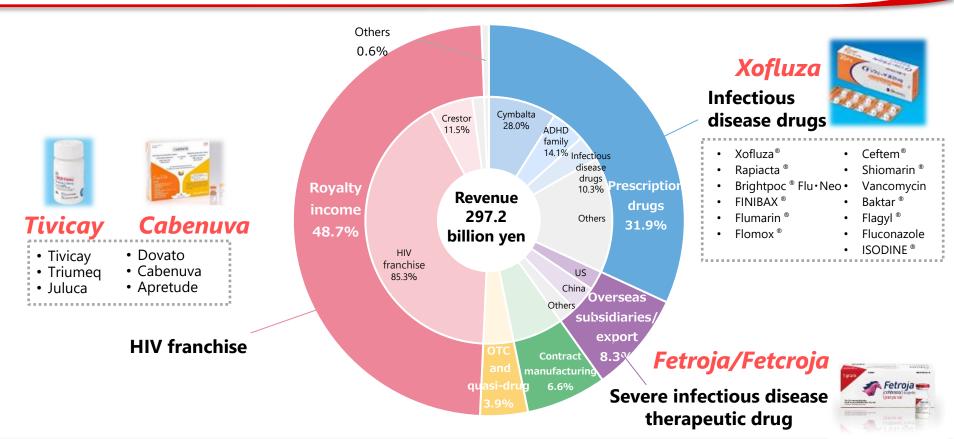
### What's SHIONOGI -global expansion -





### What's SHIONOGI - revenue composition (FY2020)-





### What's SHIONOGI -Shionogi's strengths-



#### R&D

More than 10 new, in-house discovered drugs have been launched since 2000 when we embarked on transformations



#### **Know-how of infectious diseases**

Pursue total care of infectious diseases by harnessing our know-how accumulated over more than 60 years through R&D of infectious diseases









#### **Diverse partnering**

Discover innovative new drugs in-house and provide to patients across the world through partnering that maximizes the value of compounds



Promote the "development and building of strong individuals and organizations capable of surviving global competition"





### Shionogi's History in Infectious Disease Area

-In-house discovered Infectious Diseases Drugs-







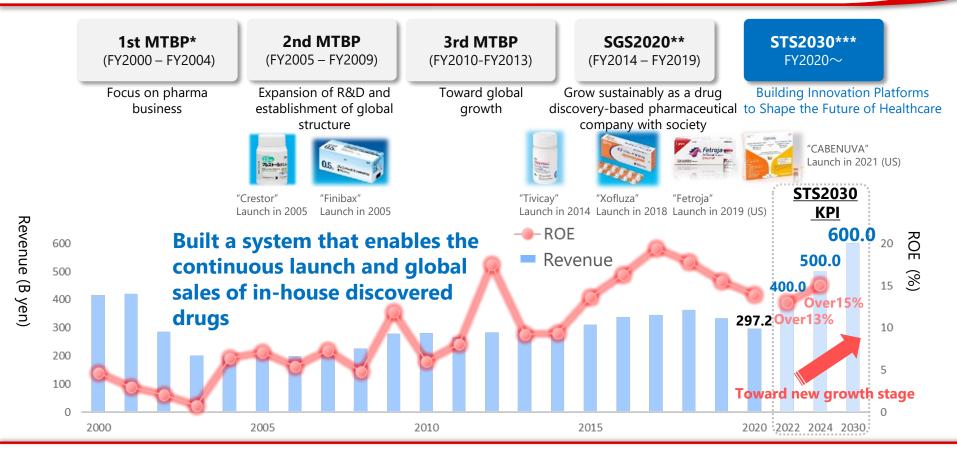
# 3. Sustainable Growth as as a Leading Company in Infectious Diseases

-Aiming to Protect People Worldwide from the Threat of Infectious Diseases-



### **Shionogi's Growth History**

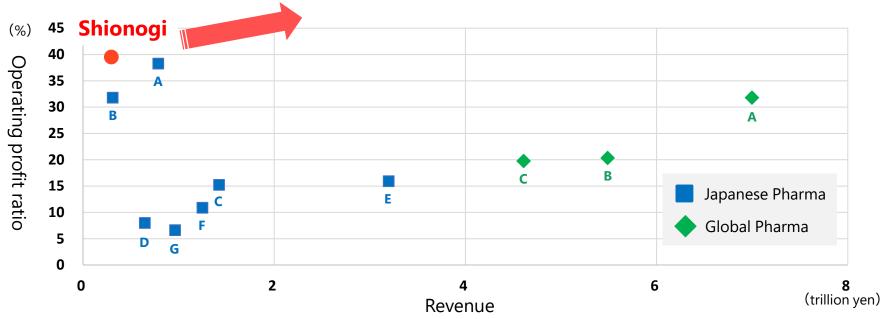




### **High Operating Profit Margin**



#### Comparison of operating profit ratio of major pharmaceutical companies



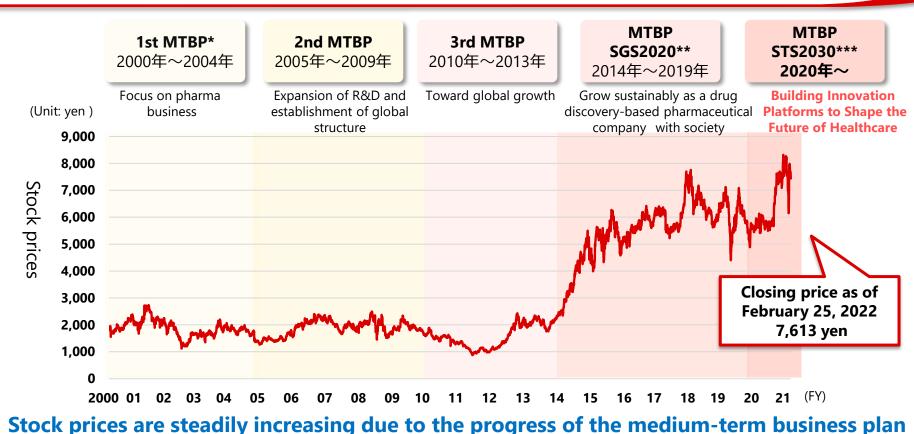
With a strong presence,

to be a company that consistently grows as it contributes to society



### **Stock Price Changes**







### 2030 Vision, Shionogi Transformation Strategy 2030 (STS2030)





Building Innovation Platforms to Shape the Future of Healthcare

Strategy to achieve 2030 Vision

# STS2030

Shionogi Transformation Strategy 2030 -







**STS2030** 

STS Phase 1 ('20-'24)

**STS Phase 2** ('25-)









### **Medium-Term Business Plan STS2030**



## **Three strategies for STS Phase1**

i. R&D strategy



**Development of innovative pipeline** 

ii. Top-Line





**Business growth through creation of diverse businesses** 

Infrastructure building

iii. Management
Foundation
Strategy



**Building framework for new value creation** 

### **Pipeline Forming the Basis of Growth**



as of Jan. 31, 2022

#### **Preclinical**

#### Phase 1

#### Phase 2

#### Phase 3 **Submission**

 S-872600 Influenza prophylactic vaccine

 S-880008 COVID-19 treatment (peptide)

S-365598 **HIV** infection

S-874713

Psycho-neurological diseases

 S-109802 Post-stroke spasticity

S-540956

Nucleic acid adjuvant

S-309309 Obesity

- sivopixant Neuropathic pain
- S-010887 Neuropathic pain
- S-120083 Inflammatory pain
- S-117957 Insomnia
- S-770108 Idiopathic pulmonary fibrosis
- S-723595 NASH
- S-588210 Solid tumor

Asapiprant Treatment by suppressing aggravation of COVID-19

- sivopixant
  - Refractory chronic cough
- **BPN14770** Alzheimer's disease
- **BPN14770** Fragile X Syndrome
- S-637880 Neuropathic low back pain
- SDT-001 Inattentive ADHD (pediatric)
- Rizmoic Opioid-induced constipation(pediatric)
- S-120083 Inflammatory pain

- Redasemtide Epidermolysis bullosa
- Redasemtide Acute ischemic stroke
- S-531011 Solid tumor
- Epertinib Malignant tumor
- S-488210 Head and neck squamous cell carcinoma
- S-584410 Bladder cancer
- S-237648 Obesity
- ADR-001 Decompensated liver cirrhosis

- S-268019 COVID-19 Prophylactic vaccine
- S-217622 COVID-19 treatment
- Cefiderocol Aerobic Gramnegative bacterial infection (Pediatric)
- Xofluza Influenza virus infection (Pediatric, < 1 year old)(Transmission)
- Zuranolone Depression
- S-588410 Esophageal cancer
- SR-0379 Cutaneous ulcer

- Xofluza (Japan) Influenza virus infection (Granules, < 20 kg)
- Xofluza Influenza virus infection (Pediatric, over 1 year old)
- rovatirelin Spinocerebellar Degeneration

Infectious Disease

New Growth Areas

Psycho-neurological Disease

**Blue: 8 Core Projects** 

: Out licenses

Aim for sustainable growth by continuously providing innovative new drugs



### **KPI in STS2030**



	КРІ	FY2020	FY2022	FY2024	FY2030
Growth Shareholder return	Revenue	297.2 B yen	400.0 B yen	500.0 B yen	600.0 B yen
	Core operating profit*	94.0 B yen	120.0 B yen	150.0 B yen	200.0 B yen
	Core operating profit margin	31.6%	Over 30%	Over 30%	-
	Overseas sales ratio (excl. RYT)	16.2%	Over 25%	Over 50%	-
	Original pipeline ratio	71%	Over 60%	Over 60%	-
	EPS	365 yen	Over 370 yen	Over 480 yen	-
	DOE	4.1%	4%以上	Over 4%	-
	ROE	13.9%	Over 13%	Over 15%	-

### Social Issues to be Tackled by Shionogi



#### **Contribution to SDGs**



- SDGs that Shionogi can help to achieve
  - Goal 3: Good health and well-being
  - Goal 8: Decent work and economic growth
  - Goal 9: Industry, innovation, infrastructure
  - Goal 12: Responsible consumption, production
  - Goal 17: Partnerships for the goals











#### **Priority tasks**

- Protect people worldwide from the threat of infectious diseases
  - Develop infectious-disease-related products and communicate accurately about them
  - Three major infectious diseases (HIV, TB, malaria)
  - AMR/viral infectious diseases (influenza, corona, etc.)
- Improve social productivity and extend healthy lifespans
  - Contribute to increasing productivity (address chronic pain, depression, etc.)
  - Meet the needs of the super-aging society (address dementia, cancer, etc.)
- Contribute to sustainable social security
  - Provide medical care optimized for the individual
  - Deliver healthcare solutions at prices that are commensurate with their value



### As a Leading Company in Infectious Diseases



#### Shionogi's strengths

- Know-how of infectious diseases
- R&D
  - Small-molecule drug discovery
- Diverse partnering
- Human resources



**Key material issue** 

Protect people worldwide from the threat of infectious diseases

#### Infectious disease initiatives

- 1. Viral infectious disease initiatives
  - Initiatives for early containment of COVID-19\*
  - Influenza initiatives
- 2. Development of drugs for the three major infectious diseases
  - HIV franchise advancement.
- 3. Contribution to tackling serious infectious diseases incl. AMR bacteria
  - Launch of Cefiderocol and promotion of proper use
- 4. Establishment of new business model for infectious diseases
  - Establishment of a sustainable business model

Achieve medium to long-term growth while solving social issues mainly in our core area of infectious diseases



### **Actions for Early Containment of COVID-19**



**Epidemic** forecasting

**Prevention** 

**Diagnosis** 

**Treatment** 

**Exacerbation** suppression











- Sewage epidemiology surveillance service for early detection of COVID-19 incursion and outbreak trends
- Development of a recombinant vaccine for COVID-19 (S-268019)
- Antigen-test kit
- Th2 chemokine TARC\* kit for assisting in predicting exacerbations
- Novel rapid diagnostic method
- Discovery and development of novel antiviral drug (S-217622)
- Discovery of developmental candidate peptide
- Licensing out asapiprant, an exacerbation controlling candidate

### Providing solutions for the overwhelmed medical system



### **COVID-19 Therapeutic Drug: S-217622**



The environment surrounding the COVID-19 oral therapeutic drug and the significance of a domestic therapeutic drug

#### Only two drugs are available in the world

- Molnupiravir (Merck) = US: EUA\*; Japan: specially approved
- PAXLOVID (Pfizer) = US: EUA\*; Japan: specially approved

#### Planned global supply

- Merck : 20 million doses by end of 2022
- Pfizer : 120 million doses by end of 2022

Even mega pharmas that have provided billions of doses of vaccines in a short span of time can only provide a limited amount of oral therapeutic drug

#### Significance of a domestic therapeutic drug

- Shionogi plans to produce 1 million doses of S-217622 in FY2021 and 10 million doses in FY2022
- Ensure stable production and supply prioritizing Japan



### **COVID-19 Therapeutic Drug: S-217622**



#### **Profile**

- 3CL protease inhibitor
- Once-daily oral administration for five days
- Confirmed antiviral activity against the omicron variant strain as strong as against existing variant strains (nonclinical trial)
- Assumed patients
  - Irrespective of high risk factors or vaccination
  - Patients with mild or moderate symptoms and asymptomatic patients

#### **Supply**

- Production plan
  - 1 million doses in Japan by end of March 2022
  - More than 10 million doses per year in FY2022



#### **Development status**

- Applied for approval of production and sales (February 25, 2022)
- Top-line results of the Phase 2b Part
  - A significant antiviral benefit against placebo
  - A significant improvement compared to placebo in respiratory symptoms characteristic of the omicron variant
  - No adverse event of concern has been recognized

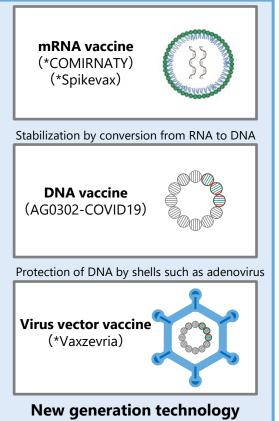
#### **Future time schedule**

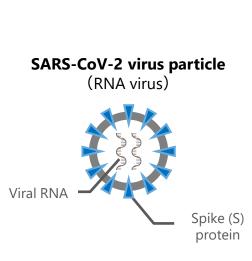
- Japan
  - Mild/moderate: ongoing Phase 3 part
  - Asymptomatic/only mild symptoms: ongoing Phase 2b/3 part
- Global
  - Global Phase 3 trial scheduled to be initiated

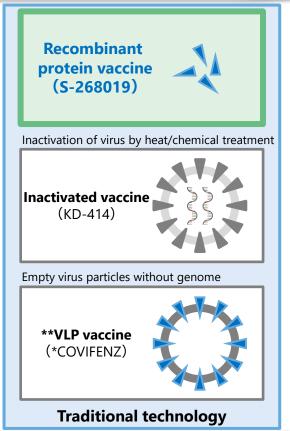


### Types of Vaccine Antigen Production Technology









#### **COVID-19 Vaccine: S-268019**



#### **Profile**

- Recombinant protein vaccine
- Aim to be approved both priming and booster indication

#### Supply

The development of a supply system for more than 30 million doses is planned in cooperation with UNIGEN (antigen production) and API (formulated product manufacturing)

#### **Future time schedule**

- Intend to initiate prior consultations on the results of ongoing clinical trials
- Consult with the authorities for domestic application

#### **Ongoing Clinical trials**

- Pivotal 5 clinical trials are ongoing (on the following page)
  - Phase2/3 trial
  - Active control, neutralizing antibody titer trial
  - Placebo control, onset prevention trial
  - Phase 2/3 booster trial
  - Phase 3 booster trial

Significance of being the only domestic vaccine undergoing a comparative study in Asia to prevent the onset of symptoms

- Realization of a domestic vaccine that can be provided globally
  - Japan's contribution to global health and future growth of the industry
- Realization of "100 DAYS MISSION"
  - Prepare for any pandemic, beyond COVID-19



# 1. Viral infectious disease initiatives (COVID-19) COVID-19 Vaccine: S-268019



### **Ongoing Clinical Trials**

- Phase 2/3 trial\*1: 3,100 subjects
  - Completed observation through Day 57 with no major safety concerns
  - There are no major safety concerns
  - Topline results will be presented at Annual Meeting of Japanese Association for Infectious Diseases in April 2022
- Active control, neutralizing antibody titer trial\*<sup>2</sup>

: 1,000 subjects

- Superiority trial to compare to VAXZEVRIA intramuscular injection
- Completed the 1<sup>st</sup> inoculation of all subjects
- Placebo control, onset prevention trial\*3
  - : 54,915 subjects
  - Initiated in Vietnam from December 2021

- Phase 2/3 booster trial\*4: 204 subjects
  - Non-inferiority verification with COMIRNATY intramuscular injection by booster immunization after 2 doses of COMIRNATY
  - Top-line results: scheduled to be disclosed in early March
- Phase 3 booster trial\*5: 150 subjects
  - Evaluate the safety of booster immunization after two SPIKEVAX intramuscular injections

\*1 <u>jRCT2031210383</u>, \*2 <u>jRCT2051210151</u>, \*3 <u>NCT05212948</u>, \*4 <u>jRCT2031210470</u>, \*5 <u>jRCT2031210613</u>



### **Direction of Future Vaccine Actions**



#### **Development of nasal vaccine**









- Simple administration with no pain caused by conventional needles
- Able to effectively induce immunity in respiratory mucosa, which is the area that becomes infected, as well as the entire body
- Vaccines using BEVS\* are widely used, with established efficacy and safety
  - Speedy, low cost, and suited to mass production

- Specializes in immunization studies
- Will establish a joint search department for human mucosal vaccines, scheduled to open in April 2022
- Plan to develop a nasal vaccine against COVID-19, influenza and pneumococcal in cooperation with an outside partner
- Aim to initiate clinical trials in FY2022



# 1. Viral Infectious disease initiatives (Influenza) Influenza Actions



#### **Development of Xofluza®**

# Innovative therapeutic drug for influenza discovered in-house

- High antiviral effect
- Single-dose oral drug for both adults and children
- Early approval, emergency listing
  - ⇒ Approved after approx. 4 months of examination



## Drug discovery on Shionogi's drug discovery platform

#### **Tivicay**

- HIV integrase inhibitor
- Potent activity and high barrier to development of resistance

Antiviral drug research x original compound design

**Xofluza**®

Promptly provide drugs needed by all of society based on know-how of infectious diseases

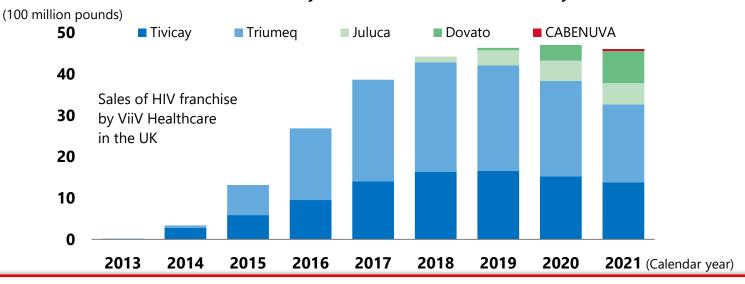


# 2. Development of drugs for the three major infectious diseases Progress of HIV Franchise by ViiV Healthcare



#### Growth of sales of HIV franchise out-licensed to ViiV\*

- Progress of a two-drug regimen with Tivicay as the key drug
- Increase in RYT and dividends due to advancement of the HIV franchise
  - RYT income from ViiV: 123.4 billion yen; dividends: 23.4 billion yen (FY2020)





#### 2. Development of drugs for the three major infectious diseases

### **Progress of HIV Franchise by ViiV Healthcare**



#### **Further progress with long-acting formulations**

- HIV market shifts to long-acting formulations for both treatment and PrEP
  - The treatment and PrEP market for long-acting formulations will grow to £ 4-5 billion each in 2030\*

#### **CABENUVA (CAB/RPV\*\*)**

The first and only long-acting injectable formulation

- A Treatment administered once every two months
  - Reduce the burden of continuing treatment



#### Apretude (cabotegravir)

Long-acting formulation for **PrFP** 

- A prevention administered once every two months
  - Freedom from daily oral administration
- Paradigm shift in the PrEP market
  - Higher preventive effect than existing drugs

#### S-365598

Third-generation HIV integrase inhibitors

- Administration once every three months or more
  - Further improvement of convenience
- Intend to initiate Phase 1 trial by 2023

Achieve further growth of the HIV franchise with long-acting formulations



#### 3. Contribution to tackling serious infectious diseases incl. AMR bacteria **Launch of Cefiderocol and Promotion of Proper Use**



#### **Antimicrobial Resistance (AMR)**

AMR is difficult to detect and spreads relatively slowly, a serious problem, being referred to as "a slow tsunami that threatens to undo a century of medical progress"

- Deaths due to AMR (annual)
- Deaths attributable to AMR per year by 2050
- Estimated economic impact

- ⇒ 0.7 million people
- **⇒** Over 10 million people\*
- ⇒ \$100 trillion

#### AMR measures are "issue to be tackled on a global scale"



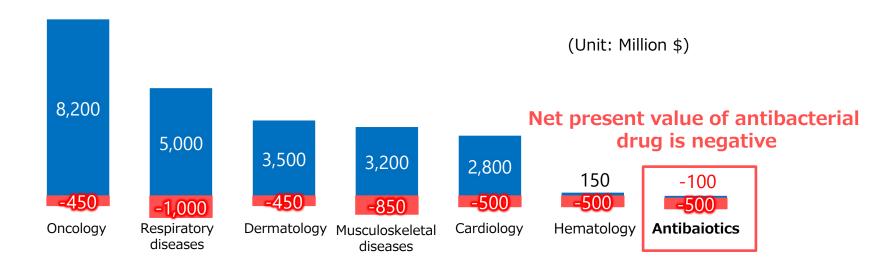
In parallel with the launch of a multidrug-resistant gram-negative bacterial infection therapeutic drug Fetroja\*\*, continue to promote the proper use to prevent the outbreak of new resistant bacteria and viruses



# 4. Establishment of new business model for infectious diseases Difficulty of Infectious Disease Business



#### **Profitability by medical property**



Many companies have withdrawn from antimicrobial R&D due to low profit predictability Venture companies developing infectious disease drugs also have gone bankrupt



# 4. Establishment of new business model for infectious diseases Establishment of a Sustainable Business Model



#### To build a sustainable business model

No growing industries/markets

No attractive market

No fire

in trouble if a fire breaks out

Negative spiral in the infectious disease business

**Example: fire extinguisher model** 

**Decrease in R&D investment** 

As a precaution, purchase a fire extinguisher

Build a model that will be supported by society in normal times\* and will make the maximum contribution in an emergency

⇒ Need for society as a whole to continue working on infectious disease control



<sup>\*</sup> Preparation from normal times: National stockpiling, development of pull-type incentives such as subscription model, etc. 43



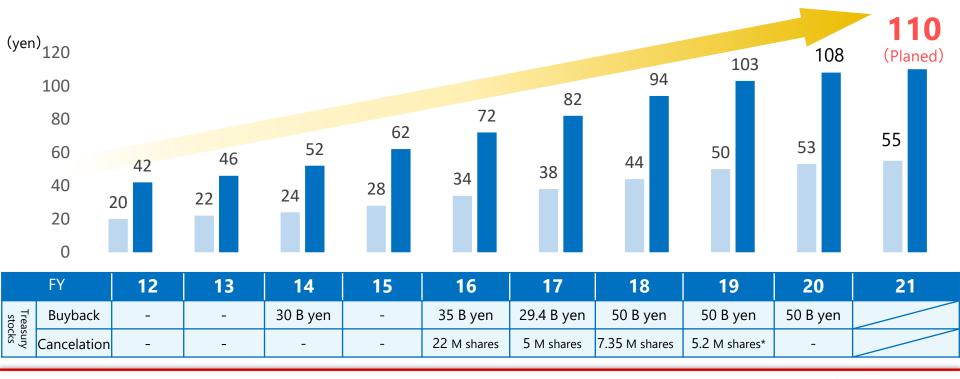
### 4. Shareholder Return



### **Shareholder Return Strategy**



- Shareholder return policy through which shareholders can feel our growth
  - > Plan to increase dividend again for the tenth consecutive year in FY2021

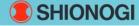




#### **Thank You for Your Attention**











Twitter SHIONOGI/シオノギ @SHIONOGI JP



**Instagram** SHIONOGI/シオノギ @shionogi official



YouTube Shionogi/シオノギ



YouTube シオノギカナデ /Shionogi Kanade